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**A CHECK-LIST
OF
WEST VIRGINIA BIRDS**

by

MAURICE BROOKS

with Foreword by

GEORGE MIKSCH SUTTON



AGRICULTURAL EXPERIMENT STATION
COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS
WEST VIRGINIA UNIVERSITY
C. R. ORTON, Director
MORGANTOWN


267051

The portrait of the northern crested flycatcher, which is the frontispiece of this bulletin, is a reproduction of an original drawing by Louis Agassiz Fuertes, foremost American bird artist. It was prepared for, and published in, a bulletin of this Experiment Station, *The Grapevine Root Borer*, written by the author's father, Fred E. Brooks. (Bulletin No. 110, West Virginia Agricultural Experiment Station, Morgantown, W. Va. November, 1907.)

Its reproduction in the present work has been made possible through the interest and generosity of Dr. George Miksch Sutton, a worthy pupil of Fuertes in the field of bird portraiture.



NORTHERN CRESTED FLYCATCHER



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FOREWORD

WEST VIRGINIA is known the world over for its beautiful mountains. Those who have travelled through it will never forget its rugged and ever changing horizon lines, its swiftly flowing streams, the soul-satisfying wildness of its back country. Only small parts of it have become drab through industrialism, and these are principally along the boundaries. Most of it is forested. Open country is chiefly a feature of the valleys, though areas have been cleared for farming even on the highest slopes. The mountains are deep green the year round where stands of spruce and balsam fir are extensive; but throughout much of the state the winter scene is one of gray woodland irregularly patched with snow. In spring the deciduous trees brighten as their buds swell and their little tufted flowers open. Summer is a season of rich verdure everywhere—on the highest ridges and in the valleys—and of glorious blossom where rhododendron, laurel, and azalea flourish. In the fall the maples, oaks, beeches, hickories—even the tamaracks—blaze out in colors of flame even as the roadsides turn yellow with goldenrod and the stream margins purple with ironweed, thistles, and asters.

I am not a West Virginian by birth. I came to the state as a lad just past 16 years of age. At that time many eastern birds were quite new to me, for my childhood had been spent principally in Nebraska, Minnesota, Oregon, and Texas. I found the country about Bethany, in the Northern Panhandle, fascinating. Close by the village flowed Buffalo Creek, a winding stream which was only a trickle in midsummer. Here, forcing my way through dew-heavy jungles of jewelweed, nettle, and giant ragweed, I became acquainted with the Kentucky warbler. In a magnificent oak woods on the hilltop above town I finally identified the little bird which sang *cheery, cheery, cheery, chee*. It was the cerulean warbler. In the spring of 1915 I found my first nest of the common phoebe. Fancy the thrill of that!

Bethany became my home, West Virginia my state. I grew to love those Northern Panhandle hills whose moods I knew so well. I studied birds assiduously, laying plans for what might turn out to be a book some day. I did not really begin to know West Virginia as a whole, however, until I became acquainted with the Brooks family of French Creek. The men of the Brooks tribe were all naturalists—every one of them, it seemed—and grand men they were. My family and theirs soon became friends. From A. B. Brooks, whose love for West Virginia was very real and

very deep, we all drew inspiration. I never shall forget his standing at the table after dinner at 'Pebble Hearths,' our little Bethany home, and reciting 'Serene I fold my hands and wait' while all of us listened eagerly. A. B. Brooks brought his brother, Rev. E. A. Brooks, to visit us, and in "E. A." we instantly recognized that same scholarly poise which had always been "A. B.'s."

A. B.'s nephew, Maurice Brooks, the author of this work, was more nearly my own age. In him I found a truly kindred spirit. He was interested in ecology. He wanted to discuss West Virginia's life-zones and biomes. He was puzzled at finding so-called 'Carolinian birds,' such as the yellow-breasted chat, so high in the mountains. He had a wonderful knowledge of botany and of the body of the state to the south of Bethany. All this made him a person of importance and consequence to me, and led to an enduring friendship.

Through the Brookses I became acquainted with parts of West Virginia I probably never would have visited at all but for them—Terra Alta, Gaudineer Knob, the Cranberry Glades, Cranesville Swamp, Canaan Mountain. Following their suggestion, I did some collecting at such points as these, obtaining some wonderful specimens—mourning warblers just out of the nest, a baby purple finch, juvenal pine warblers, a breeding male Nashville warbler. What a privilege it was thus to add a bit to our concise knowledge of West Virginia birds!

Maurice Brooks has worked long and patiently at this check-list. His wide knowledge of the state, his first-hand familiarity with its climatic conditions, its geology, its flora, make this far more than a mere catalogue of names. Studying the list closely, one perceives how northern yet how southern, how eastern yet how western, West Virginia is; how difficult to describe the area zoögeographically in a word; how futile to attempt to summarize in a phrase or symbol the facts of a species' distribution within the state's borders when the ecological requirement for that species is puzzling or complex, or when the species adapts itself readily to a varied or changing habitat. Mr. Brooks's careful study of the *Compsothlypidae*, in particular, hints at the subtleties of the forces which have been at work in making this the highly speciated family that it is.

In a sense this check-list is only a beginning—a fresh start, so to speak; but ornithologists everywhere, especially those who are interested in the Allegheny Backbone as a barrier or isolating mechanism, will find it a sound basis for further work.

GEORGE MIKSCH SUTTON

A Check-list of West Virginia Birds

by Maurice Brooks

TEN YEARS have passed since a catalogue of the bird life of West Virginia has appeared, and during that time the state has witnessed more intensive ornithological work than any previous decade has afforded. This paper is an attempt to list the species and races of birds now known to occur in West Virginia, with notes on their seasonal distribution, their breeding status, and, in cases of some species with limited ranges in the state, the counties where they are now known to nest.

Location of West Virginia. West Virginia is characterized by highly irregular boundaries, most of them following the courses of streams. The state is located between the parallels of 37° 12' and 40° 38' North Latitude, and between the meridians of 77° 43' and 82° 38' Longitude west of Greenwich. The total area is 24,282 square miles, of which about 150 square miles is water surface. Generally speaking, the state lines of Pennsylvania and Maryland form the northern boundary; Virginia lies to the east and south; Kentucky to the south and west; and Ohio to the west. Geographically, it is difficult to place West Virginia in any section, since the Northern Panhandle extends some miles north of Pittsburgh, the Eastern Panhandle reaches within 50 miles of Washington, the southern point is some 25 miles south of Richmond, and the western extremity is west of Cleveland.

Topography and Drainage. West Virginia is unequally bisected by the central Allegheny Mountains, the dividing line of drainage following a ridge known as the Allegheny Backbone. East of this ridge is an area of approximately 4,000 square miles which is drained by the Potomac River and its tributaries. It lies within the Ridge and Valley topographical province of Fenneman. In this part of the state the mountain ridges are rather regular in their northeast-southwest trend, and the resultant drainage is of the trellised pattern.

That portion of the state west of Allegheny Backbone, about 20,000 square miles, is drained by the Ohio River and its tributaries, save for one small portion of eastern Monroe County in which the streams find their way through a gap in the mountains into the James River. The entire western part of the state is within the Allegheny Plateau topographical province of Fenneman. It is highly dissected, the drainage pattern being of the dendritic type.

Since West Virginia was not reached by glaciation, the state does not have a single natural lake; hence breeding places for water birds are scarce or nonexistent. Indeed, until the creation of some extensive artificial lakes, birds of this class were of little importance in the state's avifauna, even in migration. At the present time there are extensive flights of wild fowl at suitable places, and many species which before were of rare occurrence are now locally common.

The mean elevation of West Virginia is 1500 feet, making it the most elevated state east of the Mississippi River. The altitudinal range is 4613 feet, with the lowest point at Harper's Ferry, Jefferson County (247 feet), and the highest point the summit of Spruce Knob, Pendleton County (4860 feet). Save for the Shenandoah Valley region and the flood plain of the Ohio River the entire state is rugged, with an abundance of streams of rapid fall.

Topography, soil conditions, and geology combine to make West Virginia a "western" state economically. The three principal economic interests are mining, grazing, and lumbering, a condition which obtains in the Rocky Mountain states but nowhere else east of them.

Climate and Rainfall. West Virginia has a continental type climate, generally with hot summers and cold winters. Most of the state falls within the ranges of the *Cfa* climate in the Köppen system; that is, there is no dry season, the warmest month averages above 71.6°, and the summers are hot. The higher mountains have a *Cfb* climate according to Köppen; that is, the rainfall is well distributed, the hottest month does not average 71.6°, and the summers are cool.

The state's average rainfall is 40.22 inches but the distribution of precipitation is highly irregular. Summer winds are generally from the Gulf of Mexico, and when these moisture-laden currents strike the western slopes of the first high mountain ridges, the cooling effect results in heavy precipitation. Just east of the high mountain ridges, however, there is an area of decided "rain-shadow," with sharply reduced precipitation. These conditions may best be illustrated by comparing average rainfalls at Pickens, Randolph County, on the west slope of the mountains and at Upper Tract, Pendleton County, about 50 miles east of Pickens and on the eastward side of the high ridges. Over a 35-year period Pickens has had an average annual precipitation of 68.70 inches, while in a comparable period Upper Tract's precipitation has averaged 25.14 inches. This spread results in markedly different biotic conditions in the two areas.

Forests. So far as existing records show, every part of West Virginia was originally covered by dense forest. Lumbering operations have now removed all save remnants of the original forest, and these operations, together with destructive fires and insects and disease, have profoundly modified forest conditions. Nevertheless, it is still possible to classify the state's forests according to type. Under the system adopted by the United States Forest Service (as defined by Mattoon) West Virginia has forests of the Northern, Central Hardwoods, and Southern Regions. These may be divided as follows:

Northern Region

Spruce-Fir Forest

Pine Forest

Birch-Beech-Maple Forest

Central Hardwoods Region

Oak-Hickory-Chestnut Forest

Oak-Chestnut-Yellow Poplar Forest

Oak-Pine Forest

Southern Region

Southern Hardwoods Forest

The spruce-fir forest originally clothed the high mountain ridges in Tucker, Grant, Pendleton, Randolph, Webster, Pocahontas, and Greenbrier Counties. It had an extent of about 700,000 acres and consisted of an almost pure stand of red spruce (*Picea rubens*), with occasional intermixtures of balsam fir (*Abies balsamea*). In general this forest delimited the Canadian Life Zone in the state.

Along the crest of the Allegheny Plateau, stretching from Preston County to Greenbrier and Raleigh Counties was an area of white pine (*Pinus strobus*). On North Fork Mountain, Pendleton County, was an isolated area of red pine (*Pinus resinosa*). On either side of the Allegheny Backbone, but particularly eastward, was a considerable area of pitch pine (*Pinus rigida*).

The birch-beech-maple forest was quite extensive on the west slope of the Alleghenies and was found in isolated spots to the level of the Ohio River. Where it met the red spruce forest the dominant hardwood was yellow birch (*Betula lutea*), and here it mingled with Canada hemlock (*Tsuga canadensis*) to form (with the scattered red spruce) a northern mixed forest.

Oak-hickory-chestnut forest occurred at intermediate elevations throughout the state, but particularly on the drier slopes of the Allegheny Plateau. With the removal of the northern forests this type has invaded many areas formerly occupied by the more boreal types.

The richer and moister coves of the Alleghenies were favored sites for oak-chestnut-yellow poplar forests. These species were regularly joined by black walnut, sycamore, and other hardwoods.

East of the Alleghenies where the slopes are within a "rain shadow" area the predominant forest is oak-pine, with occasional pure stands of Virginia pine (*Pinus virginiana*). This forest grows slowly, and much of it is now scrubby in character.

In southwestern West Virginia, along the lower Ohio, Great Kanawha, and Big Sandy Rivers there was a considerable southern hardwoods element in the forest. Red gum (*Liquidambar styraciflua*) and Spanish oak (*Quercus falcata*) occurred.

Because much of West Virginia is not suitable for crop or grazing land, and because, over much of the region, forests grow rapidly, there is today an extensive second-growth stand which profoundly affects bird life. Under the discussion of species many birds are referred to the forest types which they seem most to frequent.

Life Zones. Because I believe that a modified version of the system of biotic zones as elaborated by C. H. Merriam and others is most useful in presenting the ornithological picture in a mountainous region, I have generally followed it in my writing. This is not a suitable place for a justification of such a viewpoint, or for a contrast between the traditional life-zone concept and the more recent biome concept. The system, as I follow it, would recognize three life zones in West Virginia, the Canadian, the Transition (Alleghenian), and the Carolinian.

The Canadian Zone (called elsewhere the "quasi-Canadian" Zone) corresponds very closely to the limits of the red spruce forest. In it there are no breeding birds which authors have considered austral; or, to put it another way, most breeding species have their centers of summer distribution to the north.

The Transition Zone (called by Merriam the Alleghenian in eastern North America) is precisely what its name implies, a meeting and mingling ground for Canadian and Carolinian species. It has a very poorly defined avifauna of its own, and is best thought of as an area of intermixture between northern and southern species. By far the larger part of West Virginia falls within this zone.

The Carolinian Zone has no purely northern birds in its breeding population; most species in West Virginia have their centers of distribution to the south. The Carolinian Zone in West Virginia occupies the Shenandoah Valley area and the lower river valleys in the southwestern part of the state.

Of course there are in all three zones some species of practically universal distribution throughout eastern United States.

Because West Virginia partakes of the North, the East, the South, and the West, there is, of necessity, much confusion as to bird races. The Eastern Panhandle is near the Atlantic coastal plain, and has many eastern bird races not found in other parts of the state. The southwestern section near the Kentucky border has a strong western and southern flavor. At the northern boundary of the state, near the Mason and Dixon line, a number of northern and southern races meet and mingle.

Ornithological Work in West Virginia. The space limits of this paper do not permit the inclusion of a complete bibliography of West Virginia ornithology, nor would such inclusion be desirable (save perhaps for the most recent years) since Rev. Earle A. Brooks has prepared an excellent and comprehensive work of this kind (see list of publications below). Neither has space permitted citation of the sources of many records hereinafter quoted. This is regrettable, but the author is credited in most cases, and the records are in literature.

West Virginia (as it now exists) was visited by both Audubon and Wilson. Much later W. E. D. Scott and William Brewster collected within the state and published the results of their studies. In recent years E. A. Brooks, I. H. Johnston, and P. C. Bibbee have published catalogues of the birds of the state (cited below). Dr. George M. Sutton has done much intensive work during his years of residence in West Virginia, and Dr. Alexander Wetmore has published a study that is practically state-wide in scope.

Others whose ornithological work in West Virginia has been noteworthy include Charles O. Handley, Thaddeus Surber, A. B. Brooks, Fred E. Brooks, E. R. Grose, Bayard H. Christy, Karl Haller, W. C. Legg, William A. Lunk, I. B. Boggs, J. L. Poland, W. C. Rives, T. C. Shields, J. W. Handlan, L. E. Hicks, C. W. G. Eifrig, J. Warren Jacobs, R. B. Simpson, and B. R. Weimer.

Among the more comprehensive papers dealing with West Virginia ornithology should be listed:

SCOTT, W. E. D.

Partial List of the Summer Birds of Kanawha County. Proc. of the Boston Soc. of Nat. Hist., vol. XV, Oct. 2, 1872. Boston.

BREWSTER, WILLIAM

Some Observations on the Birds of Ritchie County, West Virginia. Annals of the Lyceum of Natural History of New York, vol. XI, pp. 129-154. June, 1875.

DOAN, WILLIAM D.

Birds of West Virginia. Bull. No. 3, W. Va. Agr. Exp. Sta., Morgantown, W. Va. 1888. (Note comments on the credibility of this work further along in the present paper).

RIVES, WILLIAM C.

A Catalogue of the Birds of the Virginias. Proc. of the Newport Nat. Hist. Soc., Document VII. Newport, R. I. 1890.

BROOKS, EARLE A.

List of Birds Found in West Virginia. Rept. W. Va. State Board of Agr. No. 12. Charleston, W. Va. 1909.

BROOKS, EARLE, A.

Game Birds of West Virginia.

The Non-Game Birds of West Virginia. Second Biennial Rept. of the Forest, Game, and Fish Warden. Belington, pp. 87-106. 1912.

HANDLEY, CHARLES O.

List of Birds Noted at Lewisburg (Greenbrier County). Bird-Lore, vol. XVI, No. 3. 1914.

JOHNSTON, I. H.

Birds of West Virginia. State Dept. of Agr. Charleston, W. Va. 140 pages. 1923.

BROOKS, EARLE A.

The Birds of West Virginia. West Virginia Encyclopedia, Phil Conley, Editor. Charleston, W. Va. 1929.

BROOKS, MAURICE

Notes on the Birds of Cranberry Glades, Pocahontas Co., W. Va. Wilson Bulletin, vol. XLII, No. 4. Dec., 1930.

SUTTON, GEORGE M.

Birds of the West Virginia Panhandle. Cardinal, vol. III, No. 5. 1933.

BIBBEE, P. C.

Birds of West Virginia: A Check-list. Bull. 258. W. Va. Agr. Exp. Sta., Morgantown. April, 1934.

BROOKS, MAURICE

The Canadian Component of West Virginia's Bird Life. Cardinal, vol. IV, No. 3. Jan., 1936.

WETMORE, ALEXANDER

Observations on the Birds of West Virginia. Proc. U. S. Nat. Mus., vol. 84, No. 3021. Washington, D. C. 1937.

BROOKS, EARLE A.

A Descriptive Bibliography of West Virginia Ornithology. Published by the author at 166 Plymouth Road, Newton Highlands, Mass. April, 1938.

POLAND, J. LLOYD

A Preliminary List of the Birds of the Eastern Panhandle of West Virginia. *Redstart*, vol. V, Nos. 10 & 11. 1938.

SHIELDS, TOM E.

Some Birds of Pleasants County, West Virginia. *Redstart*, vol. VI, No. 4. 1939.

HALLER, KARL W.

A New Wood Warbler from West Virginia. *Cardinal*, vol. V, No. 3. Jan., 1940. (Original description of *Dendroica potomac*, Sutton's Warbler.)

HALLER, KARL W.

List of Birds of Mason, Cabell, Jackson, and Putnam Counties, West Virginia. *Redstart*. vol. VII, Nos. 7 & 8. 1940.

BROOKS, MAURICE

The Breeding Warblers of the Central Allegheny Mountain Region. *Wilson Bulletin*, vol. 52, No. 4. Dec., 1940.

BROOKS, MAURICE

The Austral Component of West Virginia's Bird Life. *Cardinal*, vol. V, No. 5. Jan., 1941.

BROOKS, MAURICE

Birds of the Cheat Mountains. *Cardinal*, vol. VI, No. 2. July, 1943.

LEGG, W. C.

A Preliminary List of Birds of Western Nicholas County. *Redstart*, vol. XI, Nos. 7 & 8. 1944.

The state has been fortunate in having a large group of devoted amateurs in ornithology who have contributed heavily to our knowledge of West Virginia bird life. Many of these are associated in the Brooks Bird Club (named in honor of the late A. B. Brooks). One of the activities of this group is the publication of *The Redstart*, a monthly journal of local ornithology.

West Virginia Collections in Museums. There is no adequate collection of West Virginia birds in any museum. Many of the records referred to in the main body of this paper deal with specimens in an extensive collection of birds which was located in the old capitol building in Charleston, and which burned with that building in 1923. Fortunately they were examined and catalogued by E. A. Brooks, so that the records stand even though the original specimens have been lost.

West Virginia University, at Morgantown, has the largest collection now extant. It should be noted that for several species the only known state specimen is in this collection. Through the work of Wetmore and his collectors the National Museum at Washington has a fairly large, and very valuable, lot of West

Virginia material. Carnegie Museum at Pittsburgh has a small collection of state material, and there are other scattered specimens in various museums. Some unique items are in the private collections of A. S. Morgan, Karl Haller, and William Lunk. Dr. George M. Sutton has divided his collection among Cornell University, Carnegie Museum, the University of Michigan, and other institutions.

There is great need for a West Virginia natural history museum, adequately housed and staffed, at some point where it would be of service to all the people of the state, and to students outside the state.

Nomenclature. In this paper I have followed the nomenclature of the forthcoming Fifth Edition of the American Ornithologists' Union Check-list in so far as approved changes and additions have been published. Dr. Wetmore has summarized these changes (Auk: 61, 3, July, 1944). There will, therefore, be some discrepancies between names and arrangement used here and in standard reference works. Nevertheless, it seems desirable to use the latest system of nomenclature.

Limitations of a Check-list. The list which follows has the faults and the virtues of any such catalogue. It is in no sense a descriptive manual of West Virginia birds, nor does it have great value in the making of identifications. Neither space nor funds permit extensive illustration of the work. It does attempt to set forth our best present knowledge of the state's bird life as to variety and distribution. No such list is at present available to bird students, and recent work has made former lists out of date, even if they were available for distribution.

Such a list as this is merely a starting point for future observations. It cannot pretend to be complete in its distributional data, nor would anything written today reflect truly the ornithological picture as it will be ten years hence, simply because the birds will, in many cases, fluctuate and shift their ranges during that time.

Because there is no definitive work on West Virginia birds, and because the interests of many students go beyond identification, I have ventured here to set down a brief list of reference and reading books on birds which will, I hope, be found useful and applicable to our conditions and area. The average school library will have a few books dealing with birds, but these are often poorly selected, unscientific, or uninteresting. The list which follows should give needed information; it should also go far toward stimulating an interest in birds:

PETERSON, ROGER TORY

A Field Guide to the Birds. Houghton Mifflin Co., Boston. 1939. \$2.75. This is by far the most accurate and most useful single volume for the field identification of birds. It is well illustrated and is many times superior to the popular little pocket guides which are in general use.

CHAPMAN, FRANK M.

Birds of Eastern North America. D. Appleton-Century Co., New York. \$5.00. This is a classic in American ornithological literature, the standard volume for the careful bird student who is interested in scientific ornithology as well as in field identification. It contains accurate and interesting chapters on bird migration, nesting, songs, photography, etc.

TODD, W. E. CLYDE

Birds of Western Pennsylvania. University of Pittsburgh Press, Pittsburgh. 1940. \$5.00. This is the nearest thing to a local bird manual for West Virginians, a beautiful volume, carefully prepared, which deals with the birds of an area adjoining our state. It is illustrated by some of the finest paintings of Dr. George Miksch Sutton.

ALLEN, ARTHUR A.

The Book of Bird Life. D. Van Nostrand Co., 250 Fourth Avenue, New York City. \$3.75. This is the best reading volume about birds for general school use. It is not a manual for identification of species, but it follows through the life history of birds and has excellent chapters on methods of bird study. It is illustrated with hundreds of the fine photographs which Dr. Allen has taken.

BAKER, JOHN H.

The Audubon Guide to Attracting Birds. Doubleday, Doran Co., New York City. 1941. \$2.50. This volume, edited by Mr. Baker, and containing chapters by Roger Tory Peterson and others, is full of information for those who wish to attract birds to their homes, whether it be by winter feeding or by plantings which will provide natural food and cover. It is extremely useful in connection with bird study in high-school biology, for garden clubs, and for civic bodies interested in creating bird sanctuaries.

DECK, RAYMOND S.

Pageant in the Sky. Dodd, Mead & Co., New York City, 1941. \$3.00. This volume deals with the marvels of migration, perhaps the most spectacular phase of bird behavior. It is especially dear to West Virginians since the author was a native son whose father, "Daddy" Deck, influenced the lives of thousands of students at West Virginia Wesleyan College. Beautifully written, it has its place in the English class as well as in bird study.

HICKEY, JOSEPH J.

A Guide to Bird Watching. Oxford University Press, New York City. 1943. \$3.50. This volume fills a need for the beginning student of birds who is not sure as to his methods and approach. It also contains a mine of information for the expert. The book is well written and should be in every library, where it may be read by any boy or girl who is becoming interested in birds as a hobby.

There are many journals of bird study reflecting the many interests in the field. For the teacher *Audubon Magazine* (National Audubon Society, 1006 Fifth Avenue, New York. \$2.00) is highly useful. Since it deals with other phases of biology as well as ornithology, *Natural History* (American Museum of Natural History, New York. \$4.00) is excellent for classroom use and general interest. For more advanced students *The Auk* (John T. Zimmer, Editor, American Museum of Natural History, New York. \$3.00) and *The Wilson Bulletin* (Josselyn Van Tyne, Editor, Museum of Zoology, Ann Arbor, Michigan. \$2.00) are scholarly scientific journals. *The Redstart*, of special interest to West Virginia bird students, has already been mentioned.

Acknowledgment. Since this check-list is a compilation of data, I have drawn on the published notes of practically every bird student who has worked within West Virginia. Special use has been made of unpublished notes of Rev. Earle A. Brooks and of Professor E. R. Grose. I have tried to give full credit for notes and records used, and my thanks are due all who have contributed to ornithological knowledge in the state.

Dr. George M. Sutton has been untiring in his interest and his suggestions and has contributed a much-appreciated foreword. Dr. Alexander Wetmore has read the manuscript and has offered many suggestions. To both of these men I express my special appreciation and offer them full absolution for mistakes and omissions, since these are my responsibility and not theirs.

It is my hope that the appearance of this list will stimulate still further the interest of bird students, with a resultant increase in our knowledge of West Virginia's highly complex and fascinating ornithological problems.

Division of Forestry,
West Virginia University,
Morgantown, West Virginia

ORDER GAVIIFORMES

FAMILY Gaviidae

1. *Gavia immer immer* (BRÜNNICH). Common Loon. Many West Virginia records for this species, most of them made in migration periods, with a few occurrences in winter. The artificial lakes in the state are often visited by considerable flocks of these birds during migration, flocks of 50 to 100 having been observed on Lake Lynn, Monongalia County, and on Lake Terra Alta, Preston County.

2. *Gavia stellata* (PONTOPPIDAN). Red-throated Loon. A. S. Morgan took a specimen (now in his private collection at Poca, W. Va.) on the Great Kanawha River, Putnam County, on October 25, 1932. There are a number of recent sight records, all made during migration, from Lake Lynn, Monongalia County.

ORDER COLYMBIFORMES

FAMILY Colymbidae

3. *Colymbus grisegena holböllii* (REINHARDT). Holböll's Grebe. Rare migrant and winter visitor. Recorded from the Ohio River by Bibbee and Waldron, from the Great Kanawha River by A. S. Morgan, from White Sulphur Springs by Surber, and from Bethany by Weimer. There have been at least five recent records for the species made at Lake Lynn, Monongalia County.

4. *Colymbus auritus* LINNAEUS. Horned Grebe. Found as a migrant or winter visitor throughout the state, occasionally in large numbers. Heavy flights occurred on the Buckhannon River on December 1, 1928, and on November 17, 1930. Sutton records it from the Northern Panhandle during February and March, 1924, and in November, 1930. Flocks of several hundred have been noted at Lake Lynn.

5. *Podilymbus podiceps podiceps* (LINNAEUS). Pied-billed Grebe. Generally distributed throughout the state during migration, but considered by Sutton as being rather uncommon in the Northern Panhandle. West reports adults with downy young on Lake Avalon, Ohio County, during the summer of 1935. Poland found it nesting at Leetown, Jefferson County, in the summer of 1939. Randle reports its summer occurrence and probable breeding on beaver ponds at the lower end of Cranberry Glades, Pocahontas County. It winters occasionally along the larger rivers of the state.

ORDER PELECANIFORMES

FAMILY Pelecanidae

6. *Pelecanus erythrorhynchos* GMELIN. White Pelican. Of accidental occurrence in the state. Two records for this species were made during the last week in April 1910. E. A. Brooks examined one of two specimens taken in Braxton County on April 23, 1910, and mounted by E. J. Hughes. Dr. Roy Bird Cook noted a flock along the Ohio River in Wood County during the same week. In the autumn of 1943 a single individual spent some weeks along the

Great Kanawha River, near Charleston, Kanawha County, where it was seen by hundreds of persons. The West Virginia University Museum has a specimen taken by a Mr. Dawson along the Cacapon River, Morgan County.

FAMILY Phalacrocoracidae

7. *Phalacrocorax carbo carbo* (LINNAEUS). European Cormorant. Our only West Virginia record for this species is that of a single individual taken on the Ohio River near Parkersburg, Wood County, in late November, 1914, and reported by Bibbee.

8. *Phalacrocorax auritus auritus* (LESSON). Double-crested Cormorant. E. A. Brooks reports one taken at Waverly, Wood County, on December 25, 1907, and Bibbee states that Mr. S. K. Creel has in his private collection a male taken at Parkersburg on November 18, 1922. Since the creation of Lake Lynn, Monongalia County, these birds have become rather regular migrants in that area, small flocks and individuals having been noted in both spring and fall.

ORDER CICONIIFORMES

FAMILY Ardeidae

9. *Ardea herodias herodias* LINNAEUS. Great Blue Heron. Of regular occurrence throughout the state during migration. There are a few uncertain breeding records, and several definite winter records. This bird is generally, and mistakenly, known under name of "Blue Crane."

10. *Casmerodius albus egretta* (GMELIN). American Egret. This beautiful white heron has been of rather regular occurrence in West Virginia during July and August of recent years. It commonly wanders north from its breeding grounds in late summer. We have no state breeding records, although Sutton has seen it in June in the Northern Panhandle, and Stanley Smith captured a male in full breeding plumage at French Creek, Upshur County, on April 28, 1926.

11. *Leucophoyx thula thula* (MOLINA). Snowy Egret. Bibbee collected an example of this species on the New River, Mercer County, in July, 1934. One was seen by many persons at Lake Terra Alta, Preston County, in early September, 1936.

12. *Florida caerulea caerulea* (LINNAEUS). Little Blue Heron. Like some of the other herons, individuals of this species wander northward after the breeding season, young birds (in white plumage) having been seen during summer and early autumn at many points in West Virginia. Sutton has taken specimens in Brooke County. Harold Roush and the writer saw an adult along Dent's Run, Monongalia County, on May 11, 1923.

13. *Butorides virescens virescens* (LINNAEUS). Eastern Green Heron. The only common breeding heron in West Virginia. It is found along almost all of the state's watercourses, save in heavily wooded mountainous areas.

14. *Nycticorax nycticorax hoactli* (GMELIN). Black-crowned Night Heron. Occasionally seen, but much more frequently heard at night, during migration. The common name "quok" is descriptive of the bird's voice. A few individuals winter in the state, but there are no breeding records.

15. *Nyctanassa violacea violacea* (LINNAEUS). Yellow-crowned Night Heron. A specimen in the University Museum was taken in Monongalia County, and A. S. Morgan and I. H. Johnston report it from the Great Kanawha River. Poland secured a specimen at Leetown, Jefferson County, in the summer of 1938, and A. B. Brooks examined a specimen taken near Wheeling. All our records are for summer or early fall, there being no West Virginia breeding records.

16. *Botaurus lentiginosus* (MONTAGU). American Bittern. Occasional during migration, especially along swampy streams. A few may breed in our glady areas, although West Virginia has few habitats which are suitable. There are winter records of the species from French Creek, Upshur County, and from points in the Potomac Valley.

17. *Ixobrychus exilis exilis* (GMELIN). Eastern Least Bittern. A. B. Brooks has found this species nesting near St. Albans, Kanawha County. It breeds sparingly at Leetown, and probably at other suitable localities in the state. It is sometimes fairly common in scattered favorable situations during migration.

FAMILY Ciconiidae

18. *Mycteria americana* LINNAEUS. Wood Ibis. Like so many of the other waders this southern bird occasionally wanders north after the nesting season. In 1884 there was published a record of one taken in Hampshire County by Dr. A. Wall. A. S. Morgan has in his collection a bird taken along the Coal River, Kanawha County, in July, 1928.

ORDER ANSERIFORMES

FAMILY Anatidae

19. *Sthenelides olor* (GMELIN). Mute Swan. Tom Shields and Russell Hogg examined a specimen of this introduced species taken at Wellsburg, Brooke County, on December 15, 1934. It was one of a flock which appeared on the Ohio River at about that time. Poland has seen the species at Leetown. It is permanently resident in a semi-wild state on the lake at White Sulphur Springs.

20. *Cygnus columbianus* (ORB). Whistling Swan. An irregular migrant, sometimes appearing in considerable flocks on the larger rivers and artificial lakes; much more common than formerly. The Bethany College Museum has one taken in 1895. During the autumn of 1936 there were at least seven different flights of the birds at Lake Lynn, Monongalia County.

21. *Cygnus buccinator* RICHARDSON. Trumpeter Swan. A specimen collected on Letart Island, Mason County, on November 30, 1875, was destroyed in the fire which burned the West Virginia capitol building some years ago. This is our only record for the species.

22. *Branta canadensis canadensis* (LINNAEUS). Common Canada Goose. Of regular occurrence during migration, sometimes in good numbers. Occasional in winter. There are probably occasional individuals of other races of the Canada goose, but insufficient scientific collecting has been done to make this certain.

23. *Branta bernicla hrota* (MÜLLER). American Brant. James T. Handlan records a flock of eight seen in a phenomenal concentration of waterfowl on Lake Lynn on October 24, 1936. There are a few earlier records of uncertain validity.

24. *Anser albifrons albifrons* (SCOPOLI). White-fronted Goose. T. A. Morgan took one of a flock of five along the Great Kanawha River near Poca, Putnam County, in the fall of 1893. This is our only known record for the species.

25. *Chen hyperborea hyperborea* (PALLAS). Lesser Snow Goose. Two snow geese, (one a wounded bird which was captured) and a blue goose spent some time on a small lake near Bluefield, Mercer County, during the late autumn and early winter of 1942, according to Mrs. Dickinson. Snow geese of undetermined race are seen occasionally on the Ohio River, and on Lake Lynn.

26. *Chen caerulescens* (LINNAEUS). Blue Goose. The University Museum contains a specimen taken near Morgantown, Monongalia County, on November 21, 1914, by T. A. Morgan. One was with the two snow geese mentioned under the last species.

27. *Anas platyrhynchos platyrhynchos* LINNAEUS. Common Mallard. One of the commoner and better known wild ducks in the state, breeding in small numbers in some localities, and generally distributed during migration and throughout some winters. Most nests which have been found have been along the Potomac and its tributaries. Randle reports the birds in summer at Cranberry Glades.

28. *Anas rubripes rubripes* BREWSTER. Red-legged Black Duck. This race, of doubtful validity, is represented in West Virginia by many wintering birds; at least our winter visitors of this species usually have bright red legs. Common on open water throughout the winter.

29. *Anas rubripes tristis* BREWSTER. Common Black Duck. Birds which breed in the state, and many of our migrants of this species, have paler legs, and are referred to this race. A few nest along our larger rivers, and the birds are widely distributed in migration. It is probable that this and the last race will be combined in future classifications.

30. *Anas acuta tztzihoa* VIEILLOT. American Pintail. Common migrant along the larger rivers and lakes. Not known to breed. A few may winter along the Ohio River.

31. *Anas carolinensis* GMELIN. Green-winged Teal. Fairly common migrant, usually in small flocks, in all parts of the state. Surber calls it a common winter resident along the Greenbrier River, and Poland has found it at Leetown, Jefferson County, in late December.

32. *Anas discors* LINNAEUS. Blue-winged Teal. Common and widely distributed during migration; a breeding species in some localities. Sutton records the first West Virginia nest along Juerdon Run, Brooke County, in 1912. There are more recent breeding records from Hardy County, along the Great Cacapon River. Migrants from the north arrive very early in the fall.

33. *Chaulelasmus streperus* (LINNAEUS). Gadwall. Before the creation of artificial lakes in northern West Virginia this duck was known to us only during migration, and from few observations. Bibbee recorded it along the Little Kanawha River in Wood County; Deck took a specimen along the Buckhannon River in Upshur County; Sutton has mounted a specimen taken at Bethany, Brooke County; and the writer had observed it at French Creek, Upshur County. Since Lake Lynn was formed the birds are regular in migration, with occasional good sized flocks in autumn. I have a December record for the species from Lake Terra Alta, Preston County.

34. *Mareca americana* (GMELIN). Baldpate. A common migrant along the larger rivers and on the lakes. Flocks of several hundred individuals occur on Lake Lynn. Some birds winter in the Ohio Valley.

35. *Spatula clypeata* (LINNAEUS). Shoveller. Apparently a rather uncommon migrant. Bibbee has found it along the Bluestone River, in Mercer County; Laura B. Moore has recorded it along the Ohio River, in Wood County; and the writer has seen it along the Buckhannon River and at Lake Lynn. Poland has found it wintering at Leetown, and has recorded it there as late as June. There are no breeding records.

36. *Aix sponsa* (LINNAEUS). Wood Duck. There are many indications that this beautiful duck, once a common breeder along our rivers, has returned to nest in fair numbers during recent years. It has been found breeding in Seneca State Forest, Pocahontas County; along the Greenbrier River; in various places in Preston County; and at other points. I recorded it during the summer of 1938 in Upshur County. Poland has found it a common migrant at Leetown, and has seen adults with young in summer. Boggs found it on Lake Lynn on December 24, 1938.

37. *Nyroca americana* (EYTON). Redhead. Regular migrant, sometimes in flocks of several hundred, along the lakes and larger rivers. Bibbee tells of flocks seen after severe storms in winter along the Ohio.

38. *Nyroca collaris* (DONOVAN). Ring-necked Duck. This is a regular migrant through the state, sometimes in large numbers. It winters along the Ohio and other large bodies of water when the streams are unfrozen. Deck has collected it in Greenbrier County, where it is often common on the limestone sinkholes which are frequent in that region.

39. *Nyroca valisineria* (WILSON). Canvas-back. Regular migrant, especially in autumn, along the larger water courses. Large flocks occur on Lake Lynn during October and November. Conrad, Shields, and Flouer report a flock which remained along the Ohio River near Warwood, Ohio County, during January, 1935. Boggs found a single individual at Lake Lynn on December 24, 1938.

40. *Nyroca marila nearctica* (STEJNEGER). Greater Scaup Duck. Of fairly common occurrence throughout the state during migration, and sometimes in winter.

41. *Nyroca affinis* (EYTON). Lesser Scaup Duck. Generally speaking, our most abundant wild duck in migration, occurring on practically every body of water. Occasional individuals may winter, but wintering "bluebills," as the hunters call them, are likely to be of the last species, from which the present one is not easily distinguished in the field. Surber reports an adult lesser scaup with downy young along the Greenbrier River, and Rives took a female along the Blackwater River, Tucker County, in June, 1898. Individuals have spent the summer at Lake Terra Alta, Preston County. Non-breeding birds frequently occur in summer south of the normal breeding range.

42. *Glaucionetta clangula americana* (BONAPARTE). American Golden-eye. Regular migrant and winter visitor, sometimes common along the larger rivers and lakes. Large flocks occur along the Potomac River during open winters.

43. *Charitonetta albeola* (LINNAEUS). Buffle-head. Fairly common migrant and winter visitor. Surber found it in good numbers in winter along the Greenbrier River, and Waldron has noted it in winter in Cabell County.

44. *Clangula hyemalis* (LINNAEUS). Old-squaw. Until the creation of artificial lakes in the state this duck was regarded as one of our rarer winter visitors. It now occurs regularly, sometimes in considerable flocks, at Lake Lynn and Lake Terra Alta. Poland has found it fairly common at Leetown, and along the Shenandoah River. In migration it has occurred as late as April 30, 1936 on Lake Lynn.

45. *Melanitta fusca deglandi* (BONAPARTE). White-winged Scoter. Earlier records include birds seen by the Morgans in Putnam County, and a specimen taken at French Creek on October 25, 1913. Recently the species has been recorded regularly in fall migration at Lake Lynn and Lake Terra Alta. There are a few scattered spring migration records.

46. *Melanitta perspicillata* (LINNAEUS). Surf Scoter. I. B. Boggs and the writer found a flock of these ducks at Lake Lynn on November 5, 1936, this being, so far as I am aware, the only West Virginia record.

47. *Oidemia nigra americana* (SWAINSON). American Scoter. Reported by Dr. Roy Bird Cook from the neighborhood of Huntington and by the Morgans from Putnam County. Recently the birds have occurred on several occasions, all of them in autumn, at Lake Lynn.

48. *Erismatura jamaicensis rubida* (WILSON). Ruddy Duck. Fairly common and widely distributed throughout the state in migration, remaining in small numbers throughout the winter when open water is available.

49. *Lophodytes cucullatus* (LINNAEUS). Hooded Merganser. Well distributed throughout the state during migration; a winter resident where there is open water of any extent. Sutton suggests that the species may have bred in the Northern Panhandle, a pair, apparently mated, having been observed in late spring along Buffalo Creek.

50. *Mergus merganser americanus* CASSIN. American Merganser. Regular migrant throughout the state, remaining on the larger bodies of water throughout the winter.

51. *Mergus serrator* LINNAEUS. Red-breasted Merganser. Fairly common migrant on the larger bodies of water, a few remaining in winter where there is extensive open water. Boggs found a flock at Lake Lynn on December 24, 1938.

ORDER FALCONIFORMES

FAMILY Cathartidae

52. *Cathartes aura septentrionalis* WIED. Eastern Turkey Vulture. Common permanent resident in the eastern and southeastern portions of the state; less common in summer and rare in winter in the northwestern part of West Virginia.

53. *Coragyps atratus* (MEYER). Black Vulture. A bird which, within recent years, seems definitely to have extended its range in West Virginia. Now a permanent resident in the eastern part of the state from Mercer County to Jefferson County. Handley reports seeing 14 individuals at one time in Greenbrier County. In Pocahontas County it has been noted feeding at elevations above 3,500 feet.

FAMILY Accipitriidae

54. *Elanoides forficatus forficatus* (LINNAEUS). Swallow-tailed Kite. Our only state record is one made by Surber of a specimen taken near Mill Hill, Greenbrier County, on September 3, 1908.

55. *Accipiter gentilis atricapillus* (WILSON). Goshawk. A large northern hawk which occurs in West Virginia at more or less regular intervals in winter. Our most extensive recorded flight was during the winter of 1926-27, when dozens of the birds were seen or taken throughout the state. Sutton saw one in Brooke County on December 24, 1919, and Haller saw one at Leetown, Jefferson County, in October, 1939. There have been a few reports on birds seen in summer in the high mountain areas, where they may breed occasionally.

56. *Accipiter striatus velox* (WILSON). Sharp-shinned Hawk. Fairly common permanent resident in most parts of the state; reported as casual in winter in the Northern Panhandle, becoming more common during migration.

57. *Accipiter cooperii* (BONAPARTE). Cooper's Hawk. Permanent resident in all parts of the state; more widely distributed as a breeding bird than the last. It sometimes occurs in good-sized flocks in migration.

58. *Buteo jamaicensis borealis* (GMELIN). Eastern Red-tailed Hawk. Permanent resident in small numbers in most parts of the state, especially in the lowland counties. Occasionally much more common in migration.

59. *Buteo lineatus lineatus* (GMELIN). Northern Red-shouldered Hawk. Sparingly distributed throughout the state during the breeding season, most common in the mountains of eastern West Virginia. Wetmore found a nest

near Huntington, Cabell County, on May 2, 1936. A few winter in the lower Ohio Valley. During migration there are often extensive hawk flights following the Allegheny ridges, and in these the present species is often well represented.

60. *Buteo platypterus platypterus* (VIEILLOT). Broad-winged Hawk. Fairly common and well distributed throughout most of the state during summer; apparently uncommon in the Northern Panhandle. Green has found it in Cabell County during the winter, and there are a few other winter records. During the autumnal hawk flights along the Alleghenies this is often the most abundant species, flocks of several hundred having occurred.

61. *Buteo swainsoni* BONAPARTE. Swainson's Hawk. We have one accidental record for this western hawk, a male shot by M. M. Collins four miles north of White Sulphur Springs, Greenbrier County, on September 16, 1897. Surber is our authority for this record.

62. *Buteo lagopus s.johannis* (GMELIN). American Rough-legged Hawk. Rather uncommon, though widely distributed, throughout the state during migration; apparently less common in winter. Wetmore found two at Spruce Knob, Pendleton County, on September 22, 1936, and Boggs records a bird in Canaan Valley, Tucker County, in mid-April, 1938.

63. *Aquila chrysaetos canadensis* (LINNAEUS). Golden Eagle. Despite the fact that golden eagles occur in West Virginia at all seasons of the year, there is as yet no positive evidence that the birds have bred in the state. Four young birds were captured by a hunter near Dunmore, Pocahontas County, in 1934. Seven individuals were seen at one time on May 31, 1931 at North Fork Mountain, Pendleton County. There are records from practically all of our mountain counties. It is my conviction that occasional pairs do nest at spots along the many hundreds of miles of Medina sandstone cliffs which are so prominent in our eastern mountain counties.

64. *Haliaeetus leucocephalus leucocephalus* (LINNAEUS). Southern Bald Eagle. So far as I know, our West Virginia specimens are referable to this race, although a northern race (*H. l. washingtoniensis*) may occur in migration or during the winter. Bald eagles wander throughout the state in small numbers at all seasons of the year, although we do not have a confirmed nesting record for West Virginia. There is a somewhat uncertain record of a nest along the Greenbrier River.

Since immature bald eagles lack the white heads and tails which characterize birds in adult plumage, these young birds are often misidentified as golden eagles, and this may account for a number of the so-called "golden eagle" records.

65. *Circus cyaneus hudsonius* (LINNAEUS). Marsh Hawk. A fairly common migrant and winter resident throughout the state. A few pairs nest in our mountain swamps, particularly in Preston and Tucker Counties. Conner found a nest with young at Terra Alta in 1936, and DeGarmo located a nest at Cranesville Swamp, Preston County, in June, 1944.

FAMILY Pandionidae

66. *Pandion haliaetus carolinensis* (GMELIN). Osprey. Fairly common migrant along most lakes and rivers and found occasionally in summer along some of the mountain rivers. Fred E. Brooks records a nest near Alton, Upshur County, in 1894, and two birds spent the summer of 1926 along Knapp's Creek, Pocahontas County. There are many summer records from the Greenbrier River region, but little evidence of actual nesting.

FAMILY Falconidae

67. *Falco peregrinus anatum* BONAPARTE. Duck Hawk. An uncommon migrant through most of the state, with occasional pairs nesting on some of the high cliffs of the Alleghenies and the Blue Ridge. Poland records a specimen taken in Berkeley County on December 16, 1933.

68. *Falco columbarius columbarius* LINNAEUS. Eastern Pigeon Hawk. A migrant throughout the state, probably commoner than the scattered records indicate. There is some evidence of a good movement of these birds in autumn along the Back Allegheny ridges in Pocahontas County.

69. *Falco sparverius sparverius* LINNAEUS. Eastern Sparrow Hawk. Perhaps the most common hawk in West Virginia, generally distributed throughout the year, but becoming more common in fall migration. It has taken up city dwelling, nesting on window ledges of high buildings in some of the towns.

ORDER GALLIFORMES

FAMILY Tetraonidae

70. *Bonasa umbellus monticola* TODD. Appalachian Ruffed Grouse. So far as present records show, all West Virginia individuals of this species are referable to the present race, recently described by Todd, and further defined by Aldrich and Friedmann. We may expect the occurrence of the eastern race (*B. u. umbellus*) however in the counties of the Eastern Panhandle.

Ruffed Grouse are generally distributed throughout the state, becoming scarce in the counties along the Ohio River, due to a lack of suitable habitats. They have certainly undergone a considerable range extension within the last ten years, occupying again regions from which they had vanished forty or fifty years ago.

71. *Pedioecetes phasianellus campestris* RIDGWAY. Prairie Sharp-tailed Grouse. This western bird was the subject of one of the periodic introduction programs which the State Conservation Commission has from time to time attempted. A number of pairs were placed in some of the mountain counties in the spring of 1944, but there are as yet no reliable reports as to the success of the experiment.

FAMILY Phasianidae

72. *Perdix perdix perdix*. (LINNAEUS). European Partridge. This exotic game bird (the race used locally is known as the Hungarian Partridge) has been introduced repeatedly into all sections of West Virginia, results being

uniformly unsatisfactory. In some cases the birds have bred, and have even seemed to increase for a year or so, but have then completely disappeared. During the season following liberation I found two occupied nests, and flushed at least four females with young near French Creek, Upshur County. Within the last ten years I have not seen a single bird in the area.

73. *Colinus virginianus virginianus* (LINNAEUS). Eastern Bobwhite. Generally distributed and permanently resident in all sections of the state except the heavily forested portions.

74. *Colinus virginianus texanus* (LAWRENCE). Texas Bobwhite. In response to the demands of sportsmen, the Conservation Commission has on a number of occasions stocked this small race of the bobwhite to replace native birds which are sometimes destroyed in large numbers by severe winter storms. Doubtless some crossing has occurred, but the results of the introductions have been generally unsatisfactory, and the native population has seemingly been little affected.

75. *Phasianus colchicus* LINNAEUS. Pheasant. Various races of this pheasant, all known locally as "ring-necked" pheasants, have been introduced throughout the state by the conservation commission and by private agencies. These introductions have had but limited success. In forested country all have failed, but in openings around towns, Wheeling and Morgantown being notable, some of the birds have established themselves. Limited areas have even been opened to hunting. Generally speaking, West Virginia does not have enough small-grain areas to afford suitable habitats for this bird.

FAMILY Meleagrididae

76. *Meleagris gallopavo silvestris* VIEILLOT. Eastern Turkey. The forests of Pocahontas, and a few other mountain counties, probably have some wild turkeys of the original pure strain; in other parts of the state the wild birds are generally somewhat mixed with domestic turkey blood. No counties outside the mountainous regions have wild turkeys, the largest populations being in Pocahontas, Hardy, Hampshire, Pendleton, Randolph, and Webster Counties.

ORDER GRUIFORMES

FAMILY Gruidae

77. *Grus canadensis tabida* (PETERS). Sandhill Crane. One was taken in Mason County, near Point Pleasant, in September, 1934. There are a few earlier records. Since great blue herons are called "cranes" evidence presented by hunters is very unsatisfactory in establishing the presence of this true crane.

FAMILY Rallidae

78. *Rallus elegans elegans* AUDUBON. King Rail. T. A. Morgan has a breeding record for this species from Putnam County, and has recorded it during migration. Handley has noted it in Greenbrier County. A. S. Morgan tells of one taken on a frozen pond in Putnam County on December 31, 1930. Poland has found the birds at Leetown on numerous occasions and Haller has collected juveniles there.

79. *Rallus longirostris* (GMELIN). Clapper Rail. Earle A. Brooks records one taken near Waverly, Wood County, many years ago. The race of this straggler, which may have been blown in by a storm, was not determined.

80. *Rallus limicola limicola* VIEILLOT. Virginia Rail. Migrant throughout the state, the birds remaining to breed in the few localities which suit their needs. A. S. Morgan has found nests in Putnam County, and it has been reported as breeding at Beech Bottom, Brooke County. It may also nest at Lake Terra Alta and at Leetown.

81. *Porzana carolina* (LINNAEUS). Sora. This little rail migrates throughout the state, and occasionally remains to breed, Surber having found it in summer in Greenbrier County. E. A. Brooks reports one taken in Lewis County in January, 1914.

82. *Coturnicops noveboracensis noveboracensis* (GMELIN). Yellow Rail. Flouer found one in autumn near Oglebay Park, Wheeling, and the specimen has been preserved. One was seen near Volga, Barbour County, on September 6, 1935. There are a few other migration records. It probably migrates in small numbers throughout the state.

83. *Porphyryta martinica* (LINNAEUS). Purple Gallinule. West Virginia University Museum has a specimen taken by E. M. Bennett at Walkersville, Lewis County, in the spring of 1923. William S. Edwards reported the bird from the region of Coalburg, Kanawha County, many years ago.

84. *Gallinula chloropus cachinnans* BANGS. Florida Gallinule. There are scattered migration records throughout the state; the Morgans from Putnam County, Miss Virginia Cavendish from Greenbrier County, and others. One spent the summer at Jackson's Mill, Lewis County, in 1934, although I have no evidence of its having nested there.

85. *Fulica americana americana* GMELIN. American Coot. A common migrant throughout the state, sometimes occurring in sizeable flocks on the lakes and larger rivers. It may breed sparingly, although we have few spots suited to its needs. A few winter along the lower Ohio River and in the Eastern Panhandle.

ORDER CHARADRIIFORMES

FAMILY Charadriidae

86. *Charadrius melodus* ORD. Piping Plover. Poland took a specimen at Leetown on April 14, 1940. I am informed that the record given by Bibbee for "ringed plover" should refer to this species, and that it is based on a specimen taken by A. S. Morgan at Poca, Putnam County.

87. *Charadrius semipalmatus* BONAPARTE. Semipalmated Plover. Fairly common migrant at suitable localities throughout the state.

88. *Charadrius vociferus vociferus* LINNAEUS. Eastern Killdeer. Common breeding bird throughout the state, except in forested areas; common winter resident in the lower Ohio Valley, less common in other sections during winter.

89. *Pluvialis dominica dominica* (MÜLLER). American Golden Plover. A. S. Morgan has the only West Virginia records for this migrant. He has taken specimens in Putnam County.

90. *Squatarola squatarola* (LINNAEUS). Black-bellied Plover. Poland has collected this bird at Leetown, and it has been found during migration in Barbour and Monongalia Counties. All records have been made during migration.

91. *Arenaria interpres morinella* (LINNAEUS). Ruddy Turnstone. Lloyd and John Poland have found this bird at Leetown; a single individual which they observed on June 19, 1938 was undoubtedly a nonbreeding bird. This is the only West Virginia record.

FAMILY Scolopacidae

92. *Philohela minor* (GMELIN). American Woodcock. Breeds locally throughout the state, usually sparingly. Winters in small numbers in the lower Ohio Valley.

93. *Capella delicata* (ORD). Wilson's Snipe. A migrant, generally distributed throughout the state, sometimes abundant. Haller collected a juvenile in Canaan Valley, Tucker County, in July, 1937, and it has been observed in summer at Cranessville, Preston County. It winters in small numbers; Legg has found it at Mt. Lookout, Nicholas County, and I have seen it at French Creek in December and January.

94. *Numenius phaeopus hudsonicus* LATHAM. Hudsonian Curlew. First recorded from West Virginia on May 25, 1926, when A. B. Brooks, C. L. Brooks, and the writer secured a specimen at Cranberry Glades, Pocahontas County. Sutton noted it at Bethany, Brooke County, on July 24, 1933.

95. *Bartramia longicauda* (BECHSTEIN). Upland Plover. Gumbel has found a nest near Pughtown, Hancock County, Handley records it in summer from Greenbrier County, and Poland has found it breeding in Berkeley County. There are several summer records from the Oglebay Park region. Elsewhere known only as an uncommon migrant.

96. *Actitis macularia* (LINNAEUS). Spotted Sandpiper. Breeds generally throughout the state; common in migration.

97. *Tringa solitaria solitaria* WILSON. Eastern Solitary Sandpiper. Widely distributed and locally common during migration. Summering individuals have been noted by Sutton in Brooke County, and by James T. Handlan and the writer at Lake Terra Alta, but these are not known to have bred.

98. *Catoptrophorus semipalmatus* GMELIN. Willet. A. S. Morgan took a specimen some years ago in Putnam County, but the race was not determined. This is our only West Virginia record.

99. *Totanus melanoleucus* (GMELIN). Greater Yellow-legs. Occurs in migration throughout the state, occasionally in considerable numbers.

100. *Totanus flavipes* (GMELIN). Lesser Yellow-legs. Rather more abundant and more widely distributed throughout the state than the last species. Known only in migration.

101. *Erolia melanotos* (VIEILLOT). Pectoral Sandpiper. Locally common, and well distributed throughout the state in migration. It has been recorded as late as June 6 in spring migration, and as late as November 5 in autumn at Lake Terra Alta.

102. *Erolia fuscicollis* (VIEILLOT). White-rumped Sandpiper. One taken by T. A. Morgan in Putnam County. Eleven individuals were seen in a notable flight of shore birds near Volga, Barbour County, on September 5 and 6, 1935. Haller took one at Leetown on May 31, 1939.

103. *Erolia bairdii* (COUES). Baird's Sandpiper. The Oglebay group of observers at Wheeling has reported this migrant at Beech Bottom Swamp, Brooke County. Poland took one at Leetown on September 12, 1940. There are a number of records from Deep Creek Lake, Maryland, just across the West Virginia line.

104. *Erolia minutilla* (VIEILLOT). Least Sandpiper. The Morgans have taken this migrant in Putnam County, and Poland has found it in good numbers at Leetown. There are other scattered records, most of them made during the spring.

105. *Erolia alpina sakhalina* (VIEILLOT). Red-backed Sandpiper. E. A. Brooks examined a specimen taken in Lewis County in November, 1914, and Poland found individuals at Leetown in October, 1937.

106. *Limnodromus griseus griseus* (GMELIN). Eastern Dowitcher. Bibbee found a number of these birds at Terra Alta on May 5, 1925, and in a great flight of shore and water birds near Volga, Barbour County, on September 5 and 6, 1935, there were flocks of several hundred dowitchers. Poland observed two birds at Leetown on October 14, 1937, the lateness of the date suggesting that they might have been of the western race, *L. g. scolopaceus*.

107. *Micropalama himantopus* (BONAPARTE). Stilt Sandpiper. Surber took a specimen at White Sulphur Springs, Greenbrier County, on November 2, 1896. Poland has found it at Leetown on a number of occasions, and took a specimen on August 19, 1939.

108. *Ereunetes pusillus* (LINNAEUS). Semipalmated Sandpiper. Fairly common and widely distributed in suitable localities during migration. Often misidentified as "least" sandpiper, than which it seems to be more common.

109. *Ereunetes mauri* CABANIS. Western Sandpiper. Haller has secured specimens of this bird at Leetown. Poland found it fairly common at the same place during the autumn of 1937. Often associated with the last species.

110. *Crocethia alba* (PALLAS). Sanderling. Four of these usually maritime birds were found by the writer along the Buckhannon River, Upshur County, on September 22, 1933.

FAMILY Phalaropodidae

111. *Steganopus tricolor* VIEILLOT. Wilson's Phalarope. A. S. Morgan saw a number of these birds along the Great Kanawha River in August, 1928, and collected a specimen in August, 1930. Several Wheeling observers found an individual at Beech Bottom on May 4, 1935. The University Museum has a specimen taken by Poland at Leetown on September 4, 1937.

112. *Lobipes lobatus* (LINNAEUS). Northern Phalarope. Eifrig has examined specimens taken along the Potomac River in Mineral County, and Bibbee tells of the taking of two specimens by S. K. Creel, of Parkersburg, in the fall of 1922.

FAMILY Laridae

113. *Larus argentatus smithsonianus* COUES. Herring Gull. Sometimes fairly common in migration at the lakes and along the larger rivers, especially following autumn or spring storms. Poland has a winter record from Berkeley County, and there are many from the lower Ohio River.

114. *Larus delawarensis* ORD. Ring-billed Gull. Widely distributed and often fairly common during migration. Occasional in winter along the Ohio and Potomac Rivers.

115. *Larus atricilla* LINNAEUS. Laughing Gull. Taken by Morgan in Putnam County, and by Surber near White Sulphur Springs. I saw four individuals near Elkins on May 10, 1917, and a single one near Volga, Barbour County, on September 5, 1935. All records are during migration.

116. *Larus philadelphia* (ORD). Bonaparte's Gull. Generally distributed in migration throughout the state. Surprising numbers are sometimes found crossing the high mountain ridges well away from water. I have records of this kind from Mineral, Grant, Tucker, Randolph, and Pocahontas Counties. Harvey Cromer has a mounted specimen taken from Cheat Bridge, Randolph County, at an elevation of 3,600 feet. Occasional in winter.

117. *Sterna hirundo hirundo* LINNAEUS. Common Tern. Migrating individuals are occasionally seen along the larger lakes and rivers. Bibbee took a specimen near Leachtown, Wood County, on April 10, 1915, and Sutton tells of one in the Bethany College collection with the label, "Wellsburg, W. Va." Poland saw one near Martinsburg on May 8, 1933.

118. *Sterna fuscata fuscata* LINNAEUS. Sooty Tern. Following tropical hurricanes birds of this species have twice been picked up in West Virginia, once near Wheeling and once near Charleston. I. H. Johnston has given us these records.

119. *Sterna albifrons antillarum* (LESSON). Least Tern. Taken by A. S. Morgan along the Great Kanawha River near Poca.

120. *Hydroprogne caspia imperator* (COUES). Caspian Tern. Bibbee took one near Speedway, Mercer County, on October 5, 1928. An older West Virginia

record was based on a citation of this species from the Ohio River in Dawson's Birds of Ohio. Since the Ohio River, where it touches our borders, is a part of West Virginia, this record should be included.

121. *Chlidonias nigra surinamensis* (GMELIN). Black Tern. Fairly common along the lakes and rivers during both spring and fall migration, sometimes in flocks of good size. We have no breeding records, although nesting has been reported in nearby Garrett County, Maryland.

ORDER COLUMBIFORMES

FAMILY Columbidae

122. *Columba livia livia* GMELIN. Rock Dove. The common pigeon has become feral in many parts of West Virginia, and warrants a place among our introduced permanent residents.

123. *Zenaidura macroura carolinensis* (LINNAEUS). Eastern Mourning Dove. Common permanent resident in southern West Virginia; common in summer, save in large wooded areas, but rare or local during winter in the higher portions of northern and eastern West Virginia.

124. *Ectopistes migratorius* (LINNAEUS). Passenger Pigeon. Within the memory of persons still living this species was abundant in many sections of the state. We have accounts of extensive nesting areas in the Ohio and Little Kanawha River valleys. There is a credible record of the occurrence of the bird in West Virginia as late as 1905. Specimens are preserved in the museum of Bethany College, at the Ohio Valley General Hospital, in Wheeling, and at a few other points in the state.

ORDER PSITTACIFORMES

FAMILY Psittacidae

125. *Conuropsis carolinensis ludovicianus* (GMELIN). Louisiana Paroquet. Most West Virginia bird students find it difficult to realize that we once had wild parrots within the state, but the fact is attested by no less able an authority than Audubon, who tells of taking specimens near the mouth of the Great Kanawha River, along the Ohio. It is also worthy of note that Surber tells of finding these birds in Greenbrier County in August, 1881. The eastern race, *C. c. carolinensis*, may have occurred in eastern West Virginia.

ORDER CUCULIFORMES

FAMILY Cuculidae

126. *Coccyzus americanus americanus* (LINNAEUS). Yellow-billed Cuckoo. Common summer resident in most parts of the state; less common than the next in the mountains according to most observers.

127. *Coccyzus erythrophthalmus* (WILSON). Black-billed Cuckoo. Common summer resident in the higher parts of the state; perhaps less common than the last in areas of lower elevation.

ORDER STRIGIFORMES

FAMILY Tytonidae

128. *Tyto alba pratincola* (BONAPARTE). Barn Owl. Permanent resident in many sections; less frequently noted in winter. Dadisman has found a nest near Morgantown, Monongalia County; Poland one near Martinsburg, Berkeley County; and Sutton one near Bethany, Brooke County.

FAMILY Strigidae

129. *Otus asio naevius* (GMELIN). Eastern Screech Owl. Permanent resident of the state. No studies of the incidence of the red and gray phases have been made locally, but both colors occur. It seems likely that more extensive collecting will reveal the presence of the southern race, *O. a. asio*, in the southwestern portions of the state.

130. *Bubo virginianus virginianus* (GMELIN). Great Horned Owl. Permanent resident in most parts of the state. During the winter months we may also be visited by other races of this species, since these birds are subject to periodic southward movements.

131. *Nyctea scandiaca* (LINNAEUS). Snowy Owl. Our records of this great white northern owl go back to Alexander Wilson who records the bird from the Long Reach of the Ohio River. In more recent years specimens have been taken, or birds seen, in many counties. All are winter records.

132. *Strix varia varia* BARTON. Northern Barred Owl. Permanent resident throughout the state.

133. *Asio otus wilsonianus* (LESSON). Long-eared Owl. Local permanent resident, apparently never very common, in parts of the state where there are extensive pine forests. Such forests are found east of the Allegheny Mountains, and in a belt just east of the Ohio River on the bluffs which define the flood plain. Most of our records come from these areas. There are scattered migration records from other sections.

134. *Asio flammeus flammeus* (PONTOPPIDAN). Short-eared Owl. Scattered records throughout the state, most of them made in migration seasons or in winter. We have no positive nesting records, although occasional pairs may breed at Cranberry Glades, Canaan Valley, or some of the other mountain swamps. Weimer reports one taken at Bethany on November 6, 1930; Montagna took one in the same county in the fall of 1938; and Poland tells of two taken along the Potomac River, Berkeley County, in December, 1934.

135. *Cryptoglaux acadica acadica* (GMELIN). Saw-whet Owl. Breeds occasionally in the spruce belt and other northern forests, and occurs as a migrant or winter resident in other parts of the state. A young bird, only recently out of the nest, was taken at Cranesville, Preston County, on June 22, 1932. The Smithsonian Institution collectors working in the state in the summer of 1936 took an immature female at Cranberry Glades, perhaps the most southern breeding point for the species in the United States. Reynolds Smith reports three young birds seen near Alpena, Randolph County, in June, 1934.

ORDER CAPRIMULGIFORMES

FAMILY Caprimulgidae

136. *Caprimulgus carolinensis* GMELIN. Chuck-will's-widow. Surber reports this bird from Lewisburg, Greenbrier County, and I have a report of its occurrence at Alderson, Monroe County. It should be looked for along the Ohio River in the extreme southwestern part of the state.

137. *Caprimulgus vociferus vociferus* WILSON. Eastern Whippoorwill. Common breeding bird in most sections of West Virginia; much less common in heavily wooded sections and in the Northern Panhandle.

138. *Chordeiles minor minor* (FORESTER). Eastern Nighthawk. Breeds in small numbers in many parts of the state, particularly in the mountains and in towns, where the eggs are laid on the roofs of buildings. During autumnal migration the birds are often abundant, sometimes occurring in flights of several hundred individuals. Such flights may well contain birds of other races than the common breeding one.

ORDER MICROPODIFORMES

FAMILY Micropodidae

139. *Chaetura pelagica* (LINNAEUS). Chimney Swift. Abundant summer resident in all sections of the state. In wilder areas the birds still build on the faces of cliffs or in hollow trees. Sutton tells of a nest found in a sycamore tree near Bethany in 1917, and I have seen nests placed on the sides of buildings.

FAMILY Trochilidae

140. *Archilochus colubris* (LINNAEUS). Ruby-throated Hummingbird. Summer resident in all parts of the state.

ORDER CORACIIFORMES

FAMILY Alcedinidae

141. *Megaceryle alcyon alcyon* (LINNAEUS). Eastern Belted Kingfisher. Common summer resident along unpolluted streams throughout the state; found in smaller numbers in winter where open water occurs.

ORDER PICIFORMES

FAMILY Picidae

142. *Colaptes auratus luteus* BANGS. Northern Flicker. This race of the flicker is generally distributed throughout the state as a breeding bird. In winter flickers are uncommon in the northern section of West Virginia, are absent from high mountain regions, and occur in somewhat lessened numbers in southern and eastern sections. Both Wetmore and Sutton suggest that the southern race, *C. a. auratus*, may breed in West Virginia, particularly in the more austral southwestern portion.

143. *Colaptes auratus borealis* RIDGWAY. Boreal Flicker. This northern race is a migrant or winter resident in West Virginia, Wetmore having secured a specimen at Flat Top Mountain, Mercer County, on October 20, 1936. It doubtless occurs much more commonly than this single record indicates.

144. *Ceophloeus pileatus abieticola* BANGS. Northern Pileated Woodpecker. Permanent resident in Northwestern and Central West Virginia, in recent years reoccupying much territory where it had been for a time rare or absent.

145. *Ceophloeus pileatus pileatus* (LINNAEUS). Southern Pileated Woodpecker. This is the race found in eastern West Virginia, and perhaps also in the lower Ohio Valley.

In this connection it may be worth while to point out that there are a good number of birds whose southern and northern races meet, without any discontinuity, in West Virginia. Where such racial interminglings occur it is impossible to define exact limits for either race, and it must be expected that most individuals taken in the nesting season will be intermediate in character, and therefore difficult to refer to any subspecies. Such a condition will be referred to in many species which follow.

The Mason and Dixon Line, frequently (and arbitrarily) adopted as a dividing line between northern and southern races, is not in any sense a natural biological boundary. There is no physiographic break here, nor are there sharply defined changes in climate or vegetation. Future check-lists, either at the local or the national level, should recognize this fact.

146. *Centurus carolinus* (LINNAEUS). Red-bellied Woodpecker. Permanent resident in much of the state; absent from the highest mountains where spruce forests occur but found by Wetmore on Red Lick Mountain, Pocahontas County, at an elevation of 3,600 feet.

147. *Melanerpes erythrocephalus erythrocephalus* (LINNAEUS). Eastern Red-headed Woodpecker. Locally common, but absent from many areas. It is a permanent resident where found, even at high elevations. Open groves of mature oak are favored habitats. At Bethany, Sutton has noted it more frequently in winter than in summer.

148. *Sphyrapicus varius varius* (LINNAEUS). Yellow-bellied Sapsucker. Common migrant in most sections of the state, breeding in the higher mountains, particularly east of the Allegheny Backbone. It is seemingly much less common in the mountains than it was twenty years ago. It has been recorded in Pendleton County as low as 2,000 feet in summer in mixed pine and oak woods. It winters in the lowlands, particularly in the southern part of the state.

149. *Dryobates villosus villosus* (LINNAEUS). Eastern Hairy Woodpecker. Fairly common permanent resident in most parts of the state, although there may be considerable seasonal shift in populations. Bayard Green states that the birds which breed near Huntington are smaller, indicating an approach toward the southern race, *D. v. auduboni*. I am also suspicious that some of the wintering birds of the spruce belt are of the northern race, *D. v. septentrionalis*. They are large and very light colored, and I do not find them in the same localities in summer.

150. *Dryobates pubescens medianus* (SWAINSON). Northern Downy Woodpecker. Common permanent resident in every part of West Virginia. Found in

winter in the spruce belt at elevations above 4,500 feet. All specimens examined are referable to this race, although the southern race, *D. p. pubescens*, should be sought for in the southwestern part of the state.

ORDER PASSERIFORMES

FAMILY Tyrannidae

151. *Tyrannus tyrannus* (LINNAEUS). Eastern Kingbird. Common breeding species throughout the state except in the higher mountains, and in other wooded regions. It does occur in the mountains at elevations up to 3,700 feet in suitable localities. Sutton finds it less common in the Northern Panhandle.

152. *Myiarchus crinitus boreus* BANGS. Northern Crested Flycatcher. Summer resident in all parts of West Virginia except the heavy northern forests. It occurs at elevations up to 4,000 feet in oak-chestnut forests however.

153. *Sayornis phoebe* (LATHAM). Eastern Phoebe. Common summer resident throughout the state, except in dense spruce forest. It occurs at high elevations however where bridges or exposed rock cliffs give it suitable nesting sites. There are a few winter records; Grose found it in the winter of 1930 on the campus of Glenville State Teachers College, Gilmer County; Breiding found it on two occasions in winter in the Northern Panhandle; and I have seen it in February in Upshur County.

154. *Empidonax flaviventris* (BAIRD AND BAIRD). Yellow-bellied Flycatcher. Known from West Virginia only as a migrant. In spring it is generally rare, but in autumn it passes through the western part of the state in good numbers during the last week in August and the first week in September. At this time it seems to frequent the beech-maple forests and willows along streams.

155. *Empidonax virescens* (VIEILLOT). Acadian Flycatcher. Summer resident throughout the state except in the higher mountains. It may be found at elevations above 3,000 feet in beech forests. Its preferred habitat is a wooded ravine whose slopes are covered with beech and maple.

156. *Empidonax traillii traillii* (AUDUBON). Alder Flycatcher. Migrant throughout the state, and a breeding species where its favored habitats, wet alder swamps, are found. We formerly thought of this as a bird of the high mountain swamps, but Sutton has found it nesting in willow at Beech Bottom Swamp along the Ohio River in Brooke County at elevations around 650 feet, and Boggs has found it nesting in Monongalia County at elevations below 1,000 feet.

157. *Empidonax minimus* (BAIRD AND BAIRD). Least Flycatcher. A breeding bird of the Transition Zone region, not being found commonly at the lower elevations or in the higher spruce-fir regions. It is abundant at the edge of the spruce forest in the Cranberry Glades area, and it nests on the hills toward the Cheat Mountains from Morgantown. It also nests in the hills of Berkeley County, along Back Creek. Elsewhere in the state it is a fairly common migrant.

158. *Myiochanes virens* (LINNAEUS). Eastern Wood Pewee. Common summer resident throughout the state; especially abundant in areas where there are extensive stands of blight-killed chestnut. It is found in the openings at even the highest elevations.

159. *Nuttallornis mesoleucus*. (LICHTENSTEIN). Olive-sided Flycatcher. Rather uncommon migrant throughout the state. It breeds locally and irregularly in some of the high mountain regions. There are nesting records from Preston, Tucker, Grant, Randolph, Pendleton, Webster, and Pocahontas Counties. Regions of fire-killed spruce where occasional living trees still stand are favored by the birds.

FAMILY Alaudidae

160. *Otocoris alpestris alpestris* (LINNAEUS). Northern Horned Lark. Occurs in migration or in winter, sometimes in good-sized flocks. The broad Allegheny plateau in Preston, Grant, and Tucker Counties seems to be a favored region for the birds, with March the month of their greatest frequency. Paler individuals which are sometimes seen in these flocks may be Hoyt's horned larks, *O. a. hoyti*.

161. *Otocoris alpestris praticola* HENSHAW. Prairie Horned Lark. Permanent resident in suitable localities throughout the state. During spring migration there are often very extensive flocks in the Ohio River Valley.

FAMILY Hirundinidae

162. *Iridoprocne bicolor* (VIEILLOT). Tree Swallow. Fairly common migrant, particularly in August and September, throughout West Virginia. It breeds in a few localities, having been noted at Cranberry Glades, Pocahontas County, near Thomas, Tucker County, and at Cranesville, Preston County. The lack of suitable breeding localities is doubtless the chief limiting factor in West Virginia.

163. *Riparia riparia riparia* (LINNAEUS). Bank Swallow. Locally distributed as a breeding bird, much more common in eastern West Virginia than in the Ohio Valley. It occurs throughout the state in migration.

164. *Stelgidopteryx ruficollis serripennis* (AUDUBON). Rough-winged Swallow. Common migrant and summer resident throughout the state, often breeding in considerable colonies in cliffs and bridge abutments.

165. *Hirundo rustica erythrogaster* (BODDAERT). Barn Swallow. Common summer resident in suitable situations throughout the state. At the Sinks of Gandy Creek, Randolph County, at an elevation of about 3,700 feet, it habitually places its nests on the face of a cliff.

166. *Petrochelidon pyrrhonota pyrrhonota* (VIEILLOT). Northern Cliff Swallow. Locally distributed as a breeding bird, with most colonies in the mountainous parts of the state. There are extensive colonies in Preston, Tucker, Grant, Randolph, Barbour, and Pocahontas Counties. Many years ago William Brewster found it nesting in Ritchie County, much nearer the Ohio River, and

in 1943 the birds nested in Upshur County. It migrates throughout much of the state, often in large flocks, although Sutton noted it infrequently in the Northern Panhandle.

167. *Progne subis subis* (LINNAEUS). Purple Martin. Local summer resident, seemingly much more restricted in range than formerly. Its colonies are scattered throughout the state, save in areas of heavy forest.

FAMILY CORVIDAE

168. *Cyanocitta cristata bromia* OBERHOLSER. Northern Blue Jay. Permanent resident in many sections of the state, with certain areas where the birds occur only during migration or in winter, and others (the Northern Panhandle is notable) where they are rare at any season. Blue jays follow their winter food supplies (largely beech and oak mast), and the spotty occurrence of this food makes for a highly irregular distribution of the birds from year to year. Some individuals approach the southern race, *C. c. cristata*, in size.

169. *Corvus corax principalis* RIDGWAY. Northern Raven. Formerly of wide occurrence in the state, now largely restricted to mountainous regions, where its numbers seem to be increasing. Within recent years it has been found as a permanent resident in Preston, Monongalia, Tucker, Grant, Hampshire, Hardy, Pendleton, Barbour, Randolph, Webster, Nicholas, Braxton, Pocahontas, Greenbrier, Monroe, and Mercer Counties. It is much less common in areas of pure red spruce forest than in mixed deciduous-coniferous forest. Nests have been found in recent years within ten miles of the State University, at Morgantown.

170. *Corvus brachyrhynchos brachyrhynchos* BBEHM. Eastern Crow. Wetmore secured a specimen, identified as of this race, in Calhoun County, and suggests that it should be the breeding bird of the northern and northwestern portions of West Virginia. Crows of this and the next race are permanent residents throughout much of West Virginia, becoming scarce and local in the higher mountains in winter. There are extensive winter roosts in the Ohio Valley.

171. *Corvus brachyrhynchos paulus* HOWELL. Southern Crow. This is the race, according to Wetmore, in southern and eastern West Virginia. Since there is no discontinuity in the ranges of the two races a large amount of overlapping in measurements results, and definite determination is often very difficult.

172. *Corvus ossifragus* WILSON. Fish Crow. Recorded by Eifrig along the Potomac. It might be expected to occur occasionally in the Harper's Ferry region.

FAMILY Paridae

173. *Parus atricapillus atricapillus* LINNAEUS. Black-capped Chickadee. This northern race is found in West Virginia, so far as is known, only in winter, when it occurs in small numbers in at least the northern part of the state. Sutton has taken it at Bethany.

174. *Parus atricapillus praticus* (OBERHOLSER). Appalachian Black-capped Chickadee. This is the breeding chickadee of the black-capped species in West Virginia. It nests in the higher mountains in Preston, Mineral, Grant, Hampshire, Hardy, Pendleton, Tucker, Randolph, Upshur, Webster, Nicholas, Pocahontas, Greenbrier, Monroe and Mercer Counties. It is at home in the spruce forests during the winter and is seemingly a permanent resident where found. In addition to occurring in spruce it is also found in the northern mixed forests and in the northern hardwoods.

175. *Parus carolinensis extimus* (TODD AND SUTTON). Northern Carolina Chickadee. Common throughout the lowlands of the state, where it is the permanently resident chickadee. It occurs on some of the isolated mountains, and meets the Appalachian chickadee in the northern hardwoods forests.

176. *Parus bicolor* LINNAEUS. Tufted Titmouse. Permanent resident throughout the state except in the high mountain forests. I have not recorded it from the spruce belt. This is the unofficial state bird of West Virginia, no official choice ever having been made.

FAMILY Sittidae

177. *Sitta carolinensis carolinensis* LATHAM. White-breasted Nuthatch. Common permanent resident in most sections of the state, becoming less common in summer, and absent in winter, in the spruce forest.

178. *Sitta canadensis* LINNAEUS. Red-breasted Nuthatch. Breeds in the spruce belt and adjacent mixed northern forests in Tucker, Grant, Pendleton, Randolph, Webster, Nicholas, and Pocahontas Counties. Found as a migrant and, less commonly, as a winter resident in other parts of West Virginia.

FAMILY Certhiidae

179. *Certhia familiaris americana* BONAPARTE. Brown Creeper. Apparently only a migrant and winter resident, probably of general distribution, in West Virginia. Wetmore secured a specimen near Huntington and others near White Sulphur Springs in November, 1936.

180. *Certhia familiaris nigrescens* BURLEIGH. Southern Brown Creeper. This is the resident creeper, being found as a breeding bird in the spruce and northern mixed forests of Preston, Tucker, Grant, Mineral, Pendleton, Randolph, Webster, and Pocahontas Counties. There are resident brown creepers in the spruce forests in winter, but their race has not been determined.

FAMILY Troglodytidae

181. *Troglodytes aedon aedon* VIEILLOT. Eastern House Wren. Oberholser has determined that house wrens in the National Museum collection from Charlestown, Jefferson County, are of this race. They occur as summer residents, and are apparently restricted to extreme eastern West Virginia.

182. *Troglodytes aedon baldwini* (OBERHOLSER). Ohio House Wren. A common breeding bird over much of West Virginia. Haller, who has devoted much attention to these birds, finds that they are the common breeding examples

even in the western part of the Eastern Panhandle. In some of the mountain counties however they are extremely rare and local, their place being taken by Bewick's wren. I have a record of house wrens nesting on top of Gaudineer Knob, Randolph County, at 4,445 feet elevation. Wetmore suggests that the western house wren, *T. a. parkmanii*, may occur as a migrant in the western part of the state.

183. *Troglodytes troglodytes hiemalis* VIEILLOT. Eastern Winter Wren. Fairly common migrant and winter resident throughout much of West Virginia. Since Burleigh has placed the most of our breeding birds in the race which follows, the breeding status of the present one in the state is somewhat uncertain. There is a natural break however in the ranges of the birds which occupy the high mountains from Tucker County south, and those that nest sparingly in northern Preston County. These latter winter wrens appear to be closer to the eastern race than to the southern mountains form.

184. *Troglodytes troglodytes pullus* (BURLEIGH). Southern Winter Wren. This is the breeding winter wren in our spruce belt and our high northern mixed forests. I have found it once in Webster County nesting in pure beech-maple type forest, with no conifers present in the area. It breeds in Tucker, Grant, Pendleton, Randolph, Webster, and Pocahontas Counties. Winter wrens of undetermined race occur in the spruce forests in winter.

185. *Thyromanes bewickii bewickii* (AUDUBON). Bewick's Wren. Locally common summer resident, especially in the mountain counties where it occurs at the fringes of the spruce forest at elevations of 4,000 feet and above. It appears to be uncommon in the Northern Panhandle, except on the ridges back from the river's flood plain. Legg finds it rather common in winter at Mt. Lookout, Nicholas County, and there are winter records from Charleston, Huntington, and Bluefield.

186. *Thryothorus ludovicianus ludovicianus* (LATHAM). Carolina Wren. Permanent resident in all sections of the state save the spruce forests. Where the mountains have been cleared the birds occur at high elevations even in winter. I have a December record of a pair on top of North Fork Mountain, Pendleton County, at 4,300 feet.

187. *Telmatodytes palustris dissaeptus* (BANGS). Prairie Marsh Wren. Known from West Virginia only as a migrant, although Sutton suggests that they may breed irregularly at Beech Bottom Swamp, Brooke County. In migration Haller has found them extremely abundant in Mason County, and there are many records from Preston, Marion, Wood, Brooke, and other counties.

188. *Cistothorus platensis stellaris* (NAUMANN). Short-billed Marsh Wren. These birds breed regularly along Gandy Creek and other tributaries of Cheat River in Randolph County at elevations around 4,000 feet. Poland has found them in summer in Jefferson County, and believes that at least three pairs nested in one marsh during the summer of 1938. Lunk finds the birds of fairly common occurrence near Fairmont. I have noted them in summer near Lorentz, Upshur County, and there are many migration records.

FAMILY Mimidae

189. *Mimus polyglottos polyglottos* (LINNAEUS). Eastern Mockingbird. Permanent resident in much of southern and eastern West Virginia, becoming local northward. There can be no question that this bird has greatly extended its breeding range in recent years. We have recent nesting records from Upshur, Marion, and Monongalia Counties. Winter records north of the usual breeding range are frequent.

190. *Dumetella carolinensis* (LINNAEUS). Catbird. Abundant summer resident in all parts of the state, including cleared areas in the high mountains. Grose has found the bird in Braxton County in December, and there are a few other winter records.

191. *Toxostoma rufum rufum* (LINNAEUS). Eastern Brown Thrasher. Common summer resident over much of West Virginia, becoming scarce, according to Sutton, in the Northern Panhandle. Parsons records a male which spent the winter at Morgantown in 1938, and Randle found a male in January, 1943, at Cranberry Glades, at an elevation of 3,200 feet.

FAMILY Turdidae

192. *Turdus migratorius migratorius* LINNAEUS. Eastern Robin. This race of the common robin migrates throughout the state, and is regarded by Wetmore as being the breeding bird of the eastern mountainous part of West Virginia. It probably breeds also in the Northern Panhandle. Haller has taken it in migration in Mason County. There are robins of this race in West Virginia throughout the year, although individuals which winter are not necessarily those which have nested nearby.

193. *Turdus migratorius achrusterus* (BATCHELDER). Southern Robin. Breeding robins of southern and western West Virginia are referred to this race by Wetmore. It probably breeds also in the Shenandoah Valley in Berkeley and Jefferson Counties. The winter status of the race is not clear, nor do we have data for making any sharp dividing line between the nesting territory of this race and the last one. Many intermediate specimens have been taken.

194. *Hylocichla mustelina* (GMELIN). Wood Thrush. A common breeding bird in every part of the state except the spruce-fir forest, where I have not found it. It does occur regularly at high elevations in the northern hardwoods and northern mixed forests however.

195. *Hylocichla guttata faxoni* BANGS AND PENARD. Eastern Hermit Thrush. Breeds locally in spruce-fir forests and around the edges of extensive mountain swamps in Preston, Tucker, Grant, Randolph, and Pocahontas Counties. It may also occur in Pendleton County, although I have not found it there. Hermit thrushes are common throughout the state in migration, and occur in small numbers in winter at lower elevations.

196. *Hylocichla ustulata swainsoni* (TSCHUDI). Eastern Olive-backed Thrush. Abundant migrant throughout the state, remaining to breed at high elevations in spruce, pine, and northern mixed forests. While it generally prefers

the spruce stands it occurs in good numbers on top of Allegheny Backbone in Grant County in stands of pitch pine. Although it is considered the more northern bird, it has a much wider breeding range in West Virginia than does the hermit thrush. The present species has been found in Preston, Tucker, Grant, Pendleton, Webster, Randolph, and Pocahontas Counties, and occurs in much more scattered and open spruce stands than does the last. In such favored spots as the high peaks of the Cheat Mountains olive-backed thrushes are abundant.

197. *Hylocichla ustulata almae* OBERHOLSER. Western Olive-backed Thrush. The western race of this bird has been detected only once in West Virginia, Wetmore having secured a specimen at Enon, Nicholas County, on May 8, 1936.

198. *Hylocichla minima minima* (LAFRESNAYE). Gray-cheeked Thrush. Sutton, Haller, Lunk, A. B. Brooks, and Wetmore have taken specimens in West Virginia in spring and fall migration. Although records are somewhat scarce it is probably a fairly common, and generally distributed, migrant.

199. *Hylocichla minima bicknelli* RIDGWAY. Bicknell's Thrush. Our only West Virginia record is of a bird collected by Lunk on the University farms near Morgantown on May 16, 1940. It was in company with gray-cheeked thrushes, two of which were also collected. Its determination was confirmed by Wetmore. This constitutes one of the very few authenticated records for Bicknell's thrush to be made west of the Allegheny Mountains.

200. *Hylocichla fuscescens fuscescens* (STEPHENS). Veery. A common migrant throughout the state, remaining to nest where there are extensive stands of hemlock, even at comparatively low elevations (900 feet in Monongalia County, along the Cheat River). It also nests in northern mixed forests, and to some extent in northern hardwoods. Around Lake Terra Alta, Preston County, the bird is very abundant in deciduous woods, and the nests are regularly placed in alder thickets. Sutton suggests that the birds may also nest in Hancock County, well away from the mountains. The western race, *H. f. salicicola*, which nests in Michigan probably occurs during migration, although its presence has not been definitely proved.

201. *Sialia sialis sialis* (LINNAEUS). Eastern Bluebird. Breeds throughout the state in suitable localities, and occurs as a common winter resident at elevations below 2000 feet.

FAMILY Sylviidae

202. *Poliophtila caerulea caerulea* (LINNAEUS). Blue-gray Gnatcatcher. Common summer resident in all parts of the state, except in mountain areas above 3,000 feet, and in Hancock County, where it is approaching the limits (locally) of its northern range. It has been found at Cranberry Glades at elevations up to 3,400 feet, where it nests very close to a much more boreal member of the same family, the golden-crowned kinglet. Gnatcatchers, in West Virginia at least, are much more common in the oak-hickory-chestnut woods than in the northern hardwoods. They are also common in the oak-pine forests of eastern West Virginia.

203. *Regulus satrapa satrapa* LICHTENSTEIN. Eastern Golden-crowned Kinglet. Breeds regularly in the spruce-fir forests, sometimes in very large numbers, and less commonly in the northern mixed forests down to elevations around 3,000 feet. Breeding birds are known from Preston, Tucker, Grant, Pendleton, Randolph, Webster, and Pocahontas Counties. Elsewhere in the state a common migrant and winter resident. The birds occur in winter on the highest mountains.

204. *Regulus calendula calendula* (LINNAEUS). Eastern Ruby-crowned Kinglet. Common migrant throughout the state, especially in spring. Lunk has found the bird in winter (1939-40) at Fairmont, and there are records of the birds wintering in the Charleston and Huntington regions. Wetmore took a male with the crown patch orange-yellow instead of red, and since there have been a number of reports of such birds (recent ones in North Carolina) the presence of a variant race may be indicated.

FAMILY Motacillidae

205. *Anthus spinoletta rubescens* (TUNSTALL). American Pipit. Migrating flocks pass through the state, especially through the Ohio Valley, where some individuals spend the winter. I also have winter records from Upshur County. Poland has not found this bird in the Eastern Panhandle.

FAMILY Bombycillidae

206. *Bombycilla cedrorum* VIEILLOT. Cedar Waxwing. Permanent resident throughout the state except in the higher mountains where it does not occur in winter.

FAMILY Laniidae

207. *Lanius ludovicianus migrans* PALMER. Migrant Shrike. Permanent resident in the eastern and southeastern portions of the state; less common northward, practically disappearing in the upper Ohio Valley. Haller has taken a specimen in Mason County which closely approaches in measurements the southern race, *L. l. ludovicianus*.

FAMILY Sturnidae

208. *Sturnus vulgaris vulgaris* LINNAEUS. Starling. Our first state record for this species was made in 1914, and by 1925 they were generally distributed throughout the territory east of the Allegheny Mountains. Starlings are found throughout the state at all seasons of the year, except that they have done little or no invading of the heavily wooded mountainous sections. Harvey Cromer informed me that he had seen only two birds at Cheat Bridge, at the edge of the spruce forest.

FAMILY Vireonidae

209. *Vireo griseus griseus* (BODDAERT). White-eyed Vireo. Common summer resident in the oak-hickory-chestnut, the oak-pine, and the Virginia pine areas in central and southwestern West Virginia; much less common in the

northern hardwoods. In very recent years the birds have appeared in the Northern Panhandle and at Cranberry Glades, the latter at elevations around 3,400 feet. Poland has found the species only once in the Eastern Panhandle.

210. *Vireo flavifrons* VIEILLOT. Yellow-throated Vireo. Widely distributed summer resident, most common at intermediate elevations on both sides of the Alleghenies. Its favored habitat is oak-chestnut forest, although it occurs sparingly in northern hardwoods.

211. *Vireo solitarius solitarius* (WILSON). Blue-headed Vireo. A fairly common migrant throughout the state, the earliest vireo in spring migration and the last to linger in the autumn. Birds which nest at Cranesville Swamp resemble this race more than the next.

212. *Vireo solitarius alticola* BREWSTER. Mountain Vireo. This race of the blue-headed vireo is a common resident in West Virginia in mountainous situations down to about 1,000-foot elevations. It does not occur, so far as I am aware, in hills of corresponding or greater height away from the principal mountain ridges. It nests in spruce, hemlock, northern mixed, northern hardwoods, white pine, and oak-chestnut forests, wherever these clothe the slopes of mountain ridges.

213. *Vireo olivaceus* (LINNAEUS). Red-eyed Vireo. One of the characteristic breeding birds of the deciduous forest; much less common in the northern mixed forest, and not occurring, so far as I am aware, in pure spruce. I doubt that there is a deciduous forest stand in West Virginia without its breeding red-eyed vireos.

214. *Vireo philadelphicus* (CASSIN). Philadelphia Vireo. Known from West Virginia as a migrant only. Sutton's work in the Northern Panhandle has established the fact that these birds are quite common and regular there in late August and early September. Bibbee took a specimen in Monongalia County on May 22, 1925. There are late spring and early fall records from Upshur, Marshall, and Randolph Counties.

215. *Vireo gilvus gilvus* (VIEILLOT). Eastern Warbling Vireo. Common summer resident at lower elevations, particularly about towns and in silver maple-elm-sycamore woods. Not common in northern hardwoods, and not found at the higher elevations.

FAMILY Compothlypidae

216. *Mniotilta varia* (LINNAEUS). Black and White Warbler. Summer resident or migrant throughout West Virginia, being found in recent years as a breeding bird at the edges of the spruce forest. It reaches its greatest abundance at medium elevations in the oak-chestnut and, to a lesser extent, the northern hardwoods forests. In the river valleys below 1,000 feet elevation it is known chiefly as a migrant.

217. *Protonotaria citrea* (BODDAERT). Prothonotary Warbler. The uncertain status of this bird in West Virginia may indicate its relegation to the hypothetical list. Doan reported a specimen taken near Buckhannon, Upshur County,

on August 3, 1887, but his records are certainly unreliable. Randle reports sight records which he believes to be accurate made at the lower end of Cranberry Glades in swampy woods. I believe that the birds will be found breeding around some of the beaver dam areas of recent establishment in the state.

218. *Limnothlypis swainsonii* (AUDUBON). Swainson's Warbler. Recent work of Legg and others has forced us to revise our concept of this bird's distribution. Bibbee took a specimen near Cooper's Rocks, Monongalia County, on June 14, 1924. Wetmore secured one in Lincoln County on April 28, 1936. Sutton and I have collected it in Nicholas County, near Mt. Lookout. It has recently been found in summer in Webster, Braxton, Fayette, and Kanawha Counties. Most stations where the birds have been found have included dense stands of hemlock, American holly, mountain laurel, or rhododendron, or a mixture of some or all of these. At the Kanawha County station however the birds are found in comparatively open oak-pine woods. Elevations for the various stations range from 700 feet to about 2,200 feet. It may be expected that the birds will turn up in all of the counties west of the Allegheny Backbone having suitable rhododendron-hemlock tangles.

219. *Helmitheros vermivorus* (GMELIN). Worm-eating Warbler. Locally distributed summer resident, particularly in beech-maple forests. It also occurs more sparingly in hemlock and oak-chestnut and oak-pine forests. So far I have not found it in red spruce, although it breeds at elevations up to 3,600 feet in the Cranberry Glades region. It is quite uncommon in the broad river valleys at lower elevations.

220. *Vermivora chrysoptera* (LINNAEUS). Golden-winged Warbler. A characteristic breeding bird of the oak-chestnut forest on the Allegheny Plateau. East of the Alleghenies it occurs as a migrant, but is rather rare or local as a breeding bird. On the flood plain of the Ohio River the bird occurs sparingly as a migrant, but it is rare or absent during the nesting season. The birds occur at high elevations (3,300 feet at Cranberry Glades and 3,700 feet near Cheat Bridge, Randolph County), but I have never found them in pure spruce forest.

Where standing dead chestnut trees cover the western slopes of the Allegheny ridges, male golden-winged warblers regularly select these dead trees for their singing perches. In the chestnut sprouts which spring from stumps and roots of dead trees the birds find satisfactory nesting sites. These chestnut sprout areas have a most interesting and characteristic warbler population. Many of the small stems and twigs become infected with blight, and their death results in a "witch's broom" effect which affords suitable dense nesting sites to warblers of a number of species. I have referred to this biotic picture under the name of the "chestnut sprout" association.

221. *Vermivora pinus* (LINNAEUS). Blue-winged Warbler. A rather rare and local migrant in most parts of the state, becoming common as a breeding bird in the Ohio Valley near the flood plain level. In the Ohio Valley counties the birds nest in southern hardwoods, oak-hickory, and Virginia pine forests.

There are scattered migration records in other localities. A male in full song was heard at Cranberry Glades, Pocahontas County, at an elevation of 3,200 feet in May, 1926. I have one or two migration records from Upshur County. Boggs has found the birds sparingly in summer in Monongalia County during recent years.

222. *Vermivora leucobronchialis* (BREWSTER). Brewster's Warbler. This warbler, regarded as a hybrid between the last two species, is not allowed specific status in the A. O. U. Check-list; nevertheless it is one of the sought-after prizes of bird students. In Marion and Monongalia Counties we find conditions ideal for the production of this hybrid; golden-winged warblers are common and blue-winged warblers are scarce. Presumably the blue-wings are unable always to find mates of their own kind, and therefore turn to mating with golden-wings. Lunk called this to our attention when he discovered and collected typical Brewster's warblers in the Fairmont region. Poland has also collected the bird there. Boggs has found male Brewster's warblers to be at least as common as typical male golden-wings in the region of Morgantown.

In the Northern Panhandle counties a condition just the opposite of that mentioned above obtains; blue-winged warblers are abundant and golden-wings are very scarce. Here also Sutton and others have found breeding Brewster's warblers.

The recessive of this hybrid, Lawrence's warbler, is known to West Virginia only through a sight record made in Ohio County by Russell West. The bird will undoubtedly turn up sooner or later in the Marion-Monongalia area.

223. *Vermivora peregrina* (WILSON). Tennessee Warbler. A migrant, generally distributed and often common in late May and in autumn, throughout the western part of the state; rather rare and local in eastern West Virginia. Poland has only a single record from the Eastern Panhandle, made at Dandridge's Dam, Jefferson County, on May 12, 1933. Wetmore took one at the summit of Spruce Knob, 4,800 feet, on September 19, 1936. I have not seen this bird at any time in the spruce forest of West Virginia.

224. *Vermivora celata celata* (SAY). Orange-crowned Warbler. Known principally as a migrant in late autumn; there are a few spring migration records of uncertain value. Montagna secured an immature male near Bethany, Brooke County, on October 20, 1938. A. B. Brooks secured one during October at Oglebay Park, Ohio County, in 1937. I have twice recorded the birds in Upshur County.

225. *Vermivora ruficapilla ruficapilla* (WILSON). Nashville Warbler. This species nests, occasionally at least, at Craneyville Swamp, Preston County, and has been found in summer by Sutton and Lunk on Canaan Mountain, Tucker County (July, 1939), and by Lunk and Schaffer near Stony River Dam, Grant County (June 1940). It has also been recorded as occurring in numbers in June at Cranberry Glades, this observation made by S. S. Dickey, but other observers have been unable to confirm his findings. The bird is a fairly common migrant elsewhere in western West Virginia. It is of rare occurrence east of the Alleghenies.

226. *Compothlypis americana pusilla* (WILSON). Northern Parula Warbler. In West Virginia these birds have an extensive breeding range both as to altitude and habitat. They occur from Opequon Creek, Jefferson County (altitude 300 feet) and Cabwaylingo Forest, Wayne County, (altitude 725 feet) to the top of Elk Mountain, Pocahontas County, (altitude 3,500 feet), and the top of North Fork Mountain, Pendleton County, (altitude 4,300 feet). They nest in southern mixed hardwoods, oak-chestnut-hickory, oak-pine, northern hardwoods, hemlock, white pine, and at the edges of spruce stands. I have not found them in pure spruce forest. West Virginia has no Spanish moss (*Tillandsia*), and very little *Usnea*, the types of vegetation usually chosen south and north for concealment of parula's nests. I have seen the nests placed in dense hemlock, and in masses of leaves on white oak and sycamore.

Some West Virginia specimens, particularly from the Eastern Panhandle, are intermediate in size and coloration, tending toward the southern race, *C. a. americana*.

227. *Dendroica aestiva aestiva* (GMELIN). Eastern Yellow Warbler. Abundant summer resident throughout the lowlands of the state, becoming much less common in the higher mountains. It now occurs near Davis, Tucker County, in a region that was originally covered by red spruce (elevation 3,100 feet). It occurs regularly at the margins of northern hardwoods and in suitable clearings in the northern mixed forest, but I have not found it actually within the spruce belt. The Newfoundland yellow warbler (*D. a. amnicola*) doubtless migrates through West Virginia, although its presence has not yet been demonstrated.

228. *Dendroica magnolia* (WILSON). Magnolia Warbler. A common migrant throughout West Virginia, remaining to breed in all of the mountain counties. It is abundant in spruce and hemlock forests, in northern mixed forests, and somewhat less so in the northern hardwoods and in the more elevated reaches of the oak-pine and oak-chestnut. The birds are now found regularly in the mountains in the "chestnut-sprout" association, where they sometimes place their nests in densely tangled dead chestnut twigs which have been overgrown by living chestnut sprouts. In Preston and Monongalia Counties the birds occur at elevations of 1,800 feet.

229. *Dendroica tigrina* (GMELIN). Cape May Warbler. A migrant throughout West Virginia, rather rare in spring and often abundant in autumn. Fall birds swarm in the insect-infested silver maples planted along city streets. Sutton found one at Bethany on December 7, 1915.

230. *Dendroica caerulescens caerulescens* (GMELIN). Black-throated Blue Warbler. This bird doubtless occurs throughout the state during migration, although it is curious that all the specimens cited by Wetmore are from mountainous regions. He found it in various parts of Randolph and Pocahontas Counties. Birds which breed at Cranesville Swamp, Preston County, are nearer this race than the next.

231. *Dendroica caerulescens cairnsii* COUES. Cairns's Warbler. This is the race of the black-throated blue warbler which breeds in all our mountain counties, save possibly in the Cranesville area as cited above. It occurs in

spruce, hemlock, white pine, pitch pine, northern mixed, oak-pine, northern hardwoods, and oak-chestnut forests. In the latter it is a characteristic companion of the magnolia warbler in the "chestnut-sprout" association. I have found it nesting in hemlock thickets at 1600 feet elevation in Monongalia County.

232. *Dendroica coronata coronata* (LINNAEUS). Eastern Myrtle Warbler. Common migrant throughout the state. In northern West Virginia it is of rare occurrence in winter, but in the Huntington area, according to Green and Miss Virginia Cavendish, it is of regular occurrence during most winters.

233. *Dendroica virens virens* (GMELIN). Black-throated Green Warbler. This is a common breeding warbler in all of the mountain counties, and it nests locally in other areas throughout the state. It ranges from elevations of around 500 feet (in Spruce Pine Hollow, Morgan County, where, in June, 1934, James T. Handlan found a nest containing four young), and around 725 feet in Cabwaylingo State Forest, Wayne County (where DeGarmo found it in 1944) to the tops of the highest spruce-clad mountains. It is found in every type of coniferous forest from the Ohio River to the Spruce belt. It also occurs regularly in oak-hickory-chestnut, where it is often common at elevations above 1,500 feet, in oak-pine, and somewhat more sparingly in northern hardwoods. Fred E. Brooks records a nest fastened to a grapevine growing in a black birch tree at French Creek on May 29, 1922. At the same place I found a nest with three eggs at a height of about 25 feet in a beech tree on June 11, 1933. I have also seen a nest in a white oak tree. In migration the birds are common throughout West Virginia.

234. *Dendroica cerulea* (WILSON). Cerulean Warbler. This is an abundant breeding bird in the counties along the Ohio River. It decreases in numbers as the Allegheny Plateau rises to the east; disappears over the higher mountain ridges; and reappears sparingly in the river valleys of the Eastern Panhandle. It is most at home in oak-hickory and southern mixed hardwood forests. The classic work done on this species is that of William Brewster in Ritchie County in 1874. In recent years the range of this species has seemingly been extending to higher elevations in West Virginia.

235. *Dendroica fusca* (MÜLLER). Blackburnian Warbler. This species breeds both in the cool spruce forests and on the dry oak-hickory and oak-pine slopes of the Alleghenies. It makes its summer home in every one of our mountain counties and reappears in Tomlinson's Run State Park, Hancock County, but the bird is not ordinarily found below 1,500 feet in the mountains. Like the golden-winged warbler, the Blackburnian often selects dead chestnut trees for its singing perches. It is a common migrant throughout the state.

236. *Dendroica dominica albilora* RIDGWAY. Sycamore Warbler. Scott, in the first published paper on West Virginia ornithology, tells of a pair of these birds taken near Coalburg, Kanawha County, in 1869. Little concerning the species in West Virginia is known even at present, although we have a number of recent records. I saw a male at Buckhannon, Upshur County, on May 8, 1931. Margolin and I saw one near Gauley Bridge, Fayette County, on

April 30, 1937, and Margolin saw another the next day just north of Huntington, Cabell County. A. B. Brooks and others have found it at Oglebay Park, Wheeling. Green located the birds in the Huntington region in the spring of 1944, and Hicks, in correspondence, reports the finding of a nest in the state.

The birds are found characteristically in the sycamores which fringe the sluggish streams of the Ohio and Great Kanawha River flood plains in southwestern West Virginia.

237. *Dendroica potomac* HALLER. Sutton's Warbler. The status of this new bird, the finding of which is one of the most exciting of recent ornithological events, has not yet been determined by the Committee on Nomenclature of the American Ornithologists' Union. To state its history briefly, on May 30, 1939, Karl Haller, accompanied by J. L. Poland, collected in Berkeley County a male warbler resembling the parula warbler in song and the yellow-throated warbler in appearance, but differing from either, and failing to match in description any bird previously known to science. Two days later a female of the same general appearance was collected in Jefferson County, sixteen miles from the site where the male had previously been found. From this pair Haller described a new species under the names given above.

The male was taken in very dry Virginia pine woods, while the female was in rich mesophytic woods along the Potomac River. The possibility of the birds being hybrids between the parula warbler and the yellow-throated warbler (or its race, the Sycamore Warbler) was at once apparent, but there are a number of complicating circumstances. One of the supposed parents, the yellow-throated warbler, has never been recorded from West Virginia, nor from the general region where the Sutton's warblers were taken. Both the Sutton's warblers were in breeding condition, not to be expected from genus hybrids. Further, it should be emphasized that the two birds were taken at points sixteen miles apart.

On May 21, 1942, Bayard H. Christy and the writer visited the areas where Sutton's warblers had been found three years previously. Near the site where the original male was collected we saw another male bird.

In the summer of 1944 L. E. Hicks and George Breiding visited this area, and they reported finding a singing male. This constitutes all the records and observations so far made on this bird. The West Virginia Conservation Commission has placed a ban on the collecting of any specimens of this species or hybrid until its status is better known.

While the theory that these birds are hybrids cannot be ruled out, it seems to the writer that we have here the possibility of a new species in process of arising through mutation. There is also the possibility that the birds are relicts of a species formerly more common.

238. *Dendroica pensylvanica* (LINNAEUS). Chestnut-sided Warbler. One of the characteristic birds of the mountain cut-over lands, where it is abundant in the "chestnut sprout" association. It also likes the dry hills covered with mountain laurel. It occurs in every one of the mountain counties from elevations of 1,500 feet upward, although I have never found it in mature spruce forests. Sutton thinks it may nest in Hancock County at elevations be-

low 1,000 feet. Outside its breeding territory it is a common migrant throughout the state.

239. *Dendroica castanea* (WILSON). Bay-breasted Warbler. A migrant throughout the state, common in spring west of the Alleghenies and apparently uncommon east of those mountains. In autumn it is often abundant.

240. *Dendroica striata* (FORSTER). Black-poll Warbler. In status very much like the last, save that the birds are not quite so common in spring west of the Alleghenies. Spring migrants occasionally linger until June.

241. *Dendroica pinus pinus* (WILSON). Northern Pine Warbler. Found as a breeding bird wherever there are pine forests, from the Virginia pine areas along the Ohio escarpment to the pitch pine areas atop the Allegheny crests at 4,000 feet or above. It is not common in white pine stands. Elsewhere the bird is a rather uncommon migrant. Occasional birds winter in West Virginia. I have a record from Summersville, Nicholas County, made on February 7, 1944.

242. *Dendroica kirtlandii* (BAIRD). Kirtland's Warbler. The procedure of including in a state check-list a bird of which a specimen has not been taken may be open to question; nevertheless the following records are included for what they are worth. On May 19, 1937, I. B. Boggs and the writer saw a bird which we believe to have been Kirtland's warbler near Ice's Ferry, Monongalia County. On May 16, 1943 Boggs had under observation for some time a male Kirtland's warbler just outside Morgantown. Both observations were made under very favorable conditions.

243. *Dendroica discolor discolor* (VIEILLOT). Northern Prairie Warbler. A common summer resident of the brushy ridges on either side of the Allegheny Mountains. The birds are particularly abundant in oak-pine and scrubby oak-hickory growths. During recent years it has extended its range considerably, occupying portions of Monongalia County and Preston County at elevations above 2,000 feet where, a short time ago, it was not found. In the Northern Panhandle it is very rare although Sutton has taken a specimen in Brooke County. I have not found it in northern hardwoods, or in forests of a more boreal type, although it is found at elevations up to 4,000 feet in the oak-pine scrub.

244. *Dendroica palmarum palmarum* (GMELIN). Western Palm Warbler. A migrant, generally uncommon in spring, but often occurring in large numbers on the Allegheny crests and in the western portion of the state in autumn. During early October considerable flocks are to be found in Preston and Tucker Counties, feeding on the ground with migrating sparrows. These birds occur occasionally as late as December in West Virginia.

245. *Dendroica palmarum hypochrysea* RIDGWAY. Yellow Palm Warbler. Poland has found this eastern race of the palm warbler in Jefferson County, and it occurs occasionally in flocks of western palm warblers on the eastern slopes of the Alleghenies. It has been recorded in winter in West Virginia.

246. *Seiurus aurocapillus* (LINNAEUS). Oven-bird. Abundant and widely distributed on the Allegheny ridges both east and west of the Allegheny Backbone; missing from the mature spruce forest, and not common in other coniferous stands. It is also much less common in the forests along the Ohio River, being rather rare and local in the Northern Panhandle. It comes into its own, however, in the oak-chestnut forest, where it is a characteristic bird of the "chestnut sprout" association. It is found at elevations of 4,000 feet in suitable situations.

247. *Seiurus noveboracensis noveboracensis* (GMELIN). Northern Water-Thrush. Migrating throughout West Virginia, this species remains to breed along some of the rhododendron-bordered mountain streams, and at the edges of a few mountain swamps. It has been found in summer in Preston, Tucker, Grant, Pendleton, Randolph, Webster, and Pocahontas Counties. It occurs in spruce and northern mixed forests, and near Terra Alta, Preston County, is found in beech-maple forest. At this situation the present species and the Louisiana water-thrush regularly nest together along the banks of Snowy Creek.

248. *Seiurus noveboracensis notabilis* RIDGWAY. Grinnell's Water-Thrush. Haller took a female in Brooke County on September 11, 1936. This race probably occurs regularly in migration in the western part of the state.

249. *Seiurus motacilla* (VIEILLOT). Louisiana Water-Thrush. An abundant and characteristic breeding bird along streams in the oak-hickory and beech-maple forests. It occurs less frequently in hemlock and white pine stands. I have not found it in pure spruce, and it is less common in the lower river valleys, possibly due to a shortage of acceptable nesting sites. I have recorded it in beech-maple forest at elevations up to 3,500 feet.

250. *Oporornis formosus* (WILSON). Kentucky Warbler. Widely distributed and often abundant in the western part of the state; not found on the higher mountains and becoming rare and local east of the Alleghenies. Wetmore has found it in Hardy County, and West reports it from Jefferson County. It occurs in southern hardwoods, scrub and pitch pine mixtures, oak-chestnut, and northern hardwoods. In the latter association I have recorded it at an elevation of 3,600 feet on the slopes of the Cheat Mountains. As with many other sylvan warblers, wooded ravines seem to hold a special attraction for this species.

251. *Oporornis agilis* (WILSON). Connecticut Warbler. In spring a rather rare migrant, becoming common at times in early autumn. Brewster records three seen in Ritchie County between April 25 and May 9, 1874. Bibbee took a specimen near Charlestown, Jefferson County, on May 28, 1924. There are a few other scattered spring records. As with the yellow-bellied flycatcher and the Philadelphia vireo, these birds often become quite common in northwestern West Virginia during late August and early September. Sutton, Haller, Lunk, and others have found them repeatedly at that time. At such times I find them in tangled fencerows or along grown-up railroad right-of-ways.

252. *Oporornis philadelphia* (WILSON). Mourning Warbler. This warbler breeds at suitable places in the spruce belt and in the northern mixed forest in Preston, Tucker, Mineral, Grant, Pendleton, Randolph, and Pocahontas Counties.

It is at home in tangles of Allegheny blackberries where fire or lumbering have removed the original timber. It also invades the higher portions of the "chestnut sprout" association, where it is often quite abundant. I have not recorded it in summer below the 3,000-foot contour. In other parts of the state it is a migrant, usually escaping notice due to its preference for tangles, and also to the fact that it seldom sings in migration at our latitudes.

253. *Geothlypis trichas brachidactyla* (SWAINSON). Northern Yellow-throat. As determined by Wetmore, this is the breeding yellow-throat of western West Virginia and the mountainous areas at least as far south as Cranberry Glades. The birds occur in every county, at every elevation, and at suitable openings in every forest type throughout the area. This is our most nearly universally distributed warbler.

254. *Geothlypis trichas trichas* (LINNAEUS). Maryland Yellow-throat. This is the breeding yellow-throat of West Virginia east of the Alleghenies, and also possibly west of this range in the extreme southern part of the state. Wetmore has collected birds of this race at Spruce Knob, Pendleton County, and Haller has taken them throughout the Eastern Panhandle and in the counties along the South Branch of the Potomac. He has also collected a specimen, possibly a migrant, near Alderson, Greenbrier County. Like the last, these birds are universally distributed throughout their West Virginia range.

255. *Icteria virens virens* (LINNAEUS). Yellow-breasted Chat. Common summer resident throughout, except in the dense forests and the highest spruce belt. It occurs regularly where the spruce has been removed, and Lunk and I have noted it at an elevation of 4,700 feet in June on Thorny Flat, Pocahontas County. Thickets of blackberry and black locust are the favorite haunts of the chat in our region. Unlike birds of this species found farther north, the chats in this state are usually not at all shy or difficult of observation.

256. *Wilsonia citrina* (BODDAERT). Hooded Warbler. These are birds of the deciduous woods in West Virginia west of the mountains. East of the Alleghenies they are scarce or absent except during migration. Throughout that part of the state drained by the Ohio River they occur in southern hardwoods, oak-chestnut, northern hardwoods, and in the "chestnut sprout" association. I have found them fairly common at 3,500 feet elevation in beech-maple forest on the slopes of Cheat Mountain, Randolph County.

257. *Wilsonia pusilla pusilla* (WILSON). Wilson's Warbler. A migrant throughout the state, usually rather uncommon in spring, and much more frequently noted in autumn.

258. *Wilsonia canadensis* (LINNAEUS). Canada Warbler. A common breeding bird in all of the mountain counties above 2,000 feet; a rather common migrant elsewhere. The birds are at home in northern hardwoods, northern mixed forest, spruce-fir, and the "chestnut sprout" association, where they are often abundant. Another favorite situation is a damp ravine with a heavy hemlock overstory and a dense rhododendron understory.

259. *Setophaga ruticilla* (LINNAEUS). American Redstart. A common breeding bird throughout most of the state except the dense spruce forest, where it is local or absent except during migration. It is often abundant in the "chestnut sprout" association when there is a remnant overstory of larger timber.

FAMILY Ploceidae

260. *Passer domesticus domesticus* (LINNAEUS). English Sparrow. Abundant permanent resident except in forested areas, and in some of the mountain counties where it is scarce outside of towns.

FAMILY Icteridae

261. *Dolichonyx oryzivorus* (LINNAEUS). Bobolink. Fairly common migrant in the broader river valleys in spring, and occasionally abundant in autumn. The birds remain to nest in Hancock, Preston, and Tucker Counties, and Surber records a nest with eggs in Greenbrier County found on June 9, 1888. Gumbel found the first recent nest near Pughtown, Hancock County, on June 14, 1936. Strausbaugh records finding the birds in summer in the valley of Muddlety Creek, Nicholas County. Within recent years bobolinks have become much more common in the Terra Alta region.

262. *Sturnella magna magna* (LINNAEUS). Eastern Meadowlark. Summer resident in suitable situations throughout the state; fairly common winter resident at lower elevations, particularly in the southwestern portion of West Virginia.

263. *Xanthocephalus xanthocephalus* (BONAPARTE). Yellow-headed Blackbird. Sutton has recorded the accidental occurrence of this western bird in Brooke County. There is an old, and largely discredited, record from Buckhannon, Upshur County, made by Doan.

264. *Agelaius phoeniceus phoeniceus* (LINNAEUS). Eastern Red-wing. Common summer resident in suitable localities throughout the state; an uncommon winter resident in much of West Virginia, becoming fairly common in the lower Ohio Valley.

265. *Agelaius phoeniceus arctolegus* OBERHOLSER. Giant Red-wing. Wetmore secured a male of this race at Enon, Nicholas County, on May 11, 1936. Haller has shown that birds of this race occur regularly in Mason County in the winter months and during migration. Sutton has found it in Brooke County in spring. These are the only West Virginia records, all presumably of migrant or winter resident birds.

266. *Icterus spurius* (LINNAEUS). Orchard Oriole. Common breeding species throughout the state at elevations below 2,000 feet; occasional in suitable localities at higher altitudes, local in the Northern Panhandle.

267. *Icterus galbula*. (LINNAEUS). Baltimore Oriole. Summer resident in suitable localities throughout the state. Not common in some of the mountain counties where forests predominate.

268. *Euphagus carolinus* (MÜLLER). Rusty Blackbird. Generally distributed throughout the state as a migrant; there are occasional winter records especially from the lower Ohio Valley.

269. *Quiscalus quiscula stonei* CHAPMAN. Stone's Grackle. This northern race of the purple grackle has been taken by Poland at Leetown, Jefferson County, and Martinsburg, Berkeley County. It probably occurs as a common summer resident and a less common winter resident throughout the Eastern Panhandle. The grackles of eastern North America present a very confused picture. According to Chapman's classification, the birds of the Allegheny Mountains area are intermediate between this and the next species, and have been named Ridgway's grackle, *Q. q. ridgwayi*. This race may not be recognized, but Chapman has identified as of this race birds collected by Poland in Berkeley, Monroe, Greenbrier, and Pendleton Counties.

270. *Quiscalus versicolor* VIELLOT. Bronzed Grackle. Common summer resident throughout the western part of the state, wintering in reduced numbers in the lower Ohio Valley.

271. *Molothrus ater ater* (BODDAERT). Eastern Cowbird. Common summer resident throughout the state; occasional in winter in the northern part of West Virginia, becoming more common in the lower Ohio Valley.

FAMILY Thraupidae

272. *Piranga olivacea* (GMELIN). Scarlet Tanager. Breeds throughout the state, except in stands of mature spruce. Found at the highest elevations if there is a stand of deciduous woods present.

273. *Piranga rubra rubra* (LINNAEUS). Summer Tanager. Common summer resident in the Ohio Valley counties north to Marshall County, becoming less common eastward toward the mountains, but reappearing in the Shenandoah and the Potomac Valleys east of the Alleghenies. During recent years these birds have greatly increased their range in western West Virginia, and may now be found up to elevations of 2,000 feet in Upshur and Barbour Counties.

FAMILY Fringillidae

274. *Richmondia cardinalis cardinalis* (LINNAEUS). Eastern Cardinal. Common permanent resident throughout the lowlands of the state, becoming much less common toward the mountains, and disappearing, except during spring and fall, at altitudes above 4,000 feet. I have never found the bird in spruce forest. The spring and fall occurrence of the birds at high elevations is something of an anomaly in a supposedly non-migrant species; nevertheless it occurs quite regularly. Winter aggregations of several hundred cardinals occur in some localities.

275. *Hedymeles ludovicianus* (LINNAEUS). Rose-breasted Grosbeak. Common breeding bird in all the mountain counties above 2,000 feet, and at much lower elevations in the Northern Panhandle from Wheeling northward. Elsewhere a fairly common migrant.

276. *Guiraca caerulea caerulea* (LINNAEUS). Eastern Blue Grosbeak. Hicks and Breiding found a nest with young in Jefferson County in June, 1944. I have found the birds in June in Fayette and Lewis Counties, and Sutton, Haller, and Boggs have August records from the Northern Panhandle. Other records include those of Bibbee in Wood County, Grose in Gilmer County, A. B. Brooks and the writer in Monongalia County, and R. T. Peterson in Lewis County. Doubtless the birds breed sparingly in the less elevated river valleys.

277. *Passerina cyanea* (LINNAEUS). Indigo Bunting. Characteristic breeding bird of the oak-chestnut forest at all elevations. Much less common in the northern hardwoods, and in coniferous forests, but abundant and generally distributed in the oak-pine areas. I have not found it in the spruce forest.

278. *Spiza americana* (GMELIN). Dickcissel. Sutton records the nesting of two pairs in Brooke County in 1916. Haller found a breeding colony near Lakin, Mason County, during the summer of 1938. Hicks and Breiding record the birds from Berkeley County in June, 1944, the first record for that part of West Virginia east of the Allegheny Mountains. Other records include those of Haller in Ohio County, A. B. Brooks in Upshur County; and the writer at Cranestown, Preston County, the latter on June 3, 1936. These birds are to be looked for in alfalfa fields; they are much less likely to be found in other situations.

279. *Hesperiphona vespertina vespertina* (COOPER). Eastern Evening Grosbeak. Randle found these birds at Cranberry Glades on May 8 and 11, 1943. Perry records them from Junior, Barbour County, during the last week in November, 1943, and Breiding found a single bird in Marshall County on October 19, 1943. There is an earlier, somewhat uncertain, record of a flock of the birds during one winter in Lewis County.

280. *Carpodacus purpureus purpureus* (GMELIN). Eastern Purple Finch. Common migrant, and fairly common winter resident, throughout the state. In the red spruce forests, and at the fringes of mountain swamps, the birds remain to nest. Sutton took a young bird just out of the nest in Canaan Valley. They occur in summer in Preston, Mineral, Grant, Tucker, Pendleton, Randolph, Pocahontas, and Greenbrier Counties. On the spruce-clad Cheat Mountains they are often abundant.

281. *Pinicola enucleator leucura* (MÜLLER). Canadian Pine Grosbeak. According to E. A. Brooks, there is a specimen of this bird in the museum of Illinois Wesleyan University, Bloomington, Illinois, credited to "West Virginia," but without further data. During the winter of 1933-34 Miss Grace Arnold captured an adult male from a small flock which was feeding on frozen apples near her home at Buckhannon. I had the privilege of examining this bird, and I saw a number of others at the same general time in Upshur County. Montagna found an immature male, very tame, at Bethany, Brooke County, in December, 1938. Eifrig has a somewhat uncertain record from near Keyser, Mineral County.

282. *Acanthis flammea flammea* (LINNAEUS). Common Redpoll. There are scattered winter records for this northern finch. Miss Helen Howell had a flock under observation for two weeks near Morgantown during the winter

of 1934-35. Peck found a small flock feeding near Morgantown in February, 1940. Margolin and the writer saw a flock at Terra Alta in January, 1937.

283. *Spinus pinus pinus* (WILSON). Northern Pine Siskin. An irregular migrant and winter visitor throughout West Virginia, remaining in summer in the high mountains during some years. There have been several recent years when the birds were abundant in June in the Cheat Mountains of Randolph and Pocahontas Counties, and they have also been found in the mountains of Tucker, Grant, and Pendleton Counties. We have no positive evidence that the birds have nested in the state.

284. *Spinus tristis tristis* (LINNAEUS). Eastern Goldfinch. Summer resident throughout the state; with some goldfinches remaining throughout the winter at elevations below 2,500 feet.

285. *Loxia curvirostra minor* (BREHM). Sitka Crossbill. A male and a female of this western race of the red crossbill which occasionally erupts into the east were taken in Ritchie County on July 1, 1889, and are now in the collection of the American Museum of Natural History in New York City. On June 11, 1941, Lunk and the writer secured two specimens which Dr. Ludlow Griscom has determined as being of this race on the slope of Gaudineer Knob, Pocahontas County. We also collected one specimen which Griscom considers intermediate between this race and *L. c. bendirei*.

286. *Loxia curvirostra neogaea* GRISCOM. Eastern Red Crossbill. Lunk and I secured a specimen of this race at Gaudineer Knob, Pocahontas County, on June 15, 1940. Crossbills of some race have occurred throughout recent years in the higher mountains of the state. Much more extensive collecting is needed to determine the true racial picture, and we have not yet secured positive evidence that the birds have nested in West Virginia. There are scattered uncertain records of the birds at other points in the state during the winter months.

287. *Loxia leucoptera leucoptera* GMELIN. White-winged Crossbill. Large flocks of these birds frequented hemlock trees throughout West Virginia during the winters of 1920 and 1921. In the summer of 1941 Lunk, Boggs, and I found these birds in numbers at Dolly Sods Fire Tower, where Randolph, Tucker, and Grant Counties join, on June 9, and on Gaudineer Knob, Pocahontas and Randolph Counties, on June 9, 10, and 11. These are our only summer records for the species. The Bethany College museum has a specimen, presumably taken locally.

288. *Pipilo erythrophthalmus erythrophthalmus* (LINNAEUS). Red-eyed Towhee. An abundant summer resident in suitable habitats throughout the state, occurring in tangles on the highest mountain tops. Towhees winter irregularly as far north as Monongalia and Brooke Counties, and regularly from Upshur County southwestward. I have not found them at this season above 2,000 feet.

289. *Passerculus sandwichensis savanna* (WILSON). Eastern Savannah Sparrow. A migrant throughout the state, remaining to breed in the Northern

Panhandle, in Monongalia County, and southward along the mountains at least to the Little Levels of Pocahontas County. Near Terra Alta this is one of the most abundant sparrows in the grasslands.

290. *Passerculus sandwichensis labradorius* HOWE. Labrador Savannah Sparrow. Wetmore secured specimens of this northern race at Mercer's Bottom, Mason County, on October 29, and on November 2, 1936.

291. *Ammodramus savannarum pratensis* (VIEILLOT). Eastern Grasshopper Sparrow. Common breeding bird of the grasslands in all parts of the state. It occurs on the Allegheny Backbone, in Pocahontas County, at an elevation of 4,300 feet.

292. *Passerherbulus caudacutus* (LATHAM). Leconte's Sparrow. Sutton and Haller found an individual of this species at Beech Bottom, Brooke County, on September 8, 1936, and Sutton took a specimen at the same locality on September 19, 1936. These are our only West Virginia records for the species.

293. *Passerherbulus henslowii henslowii*. (AUDUBON). Western Henslow's Sparrow. The first West Virginia Henslow's sparrow was taken on October 9, 1935, near Masontown, Preston County, but since that time the birds have been found pretty much over West Virginia. We have recent records from Grant, Mineral, Monongalia, Ohio, Marion, Barbour, Upshur, Wood, Cabell, Greenbrier, and Monroe Counties. Most of these are summer records, and there can be no doubt that these birds are in process of greatly extending their breeding range in this area. The eastern race, *P. h. susurrans*, may occur in migration in eastern West Virginia.

294. *Poocetes gramineus gramineus* (GMELIN). Eastern Vesper Sparrow. Common summer bird in open fields at all elevations throughout the state; a few spend the winter from Upshur County southwestward.

295. *Chondestes grammacus grammacus* (SAY). Eastern Lark Sparrow. Sparingly distributed as a breeding bird throughout the state, even at elevations up to 3,000 feet. There are recent records from Marshall, Brooke, Gilmer, Upshur, Barbour, Ohio, Hampshire, Mineral, Berkeley, and Jefferson Counties. This species fluctuates in numbers considerably. At one period, from about 1910 to 1925, it was an abundant breeding bird in central West Virginia.

296. *Aimophila aestivalis bachmanii* (AUDUBON). Bachman's Sparrow. Widely distributed as a breeding bird in the state, save in the Northern Panhandle. It frequents the slopes of grown-up pasture fields. Like the last species, it has fluctuated in numbers greatly, but now seems definitely on the increase. Miss Serena Dandridge and others have made numerous recent records of the birds in Jefferson and Berkeley Counties.

297. *Junco hyemalis hyemalis* (LINNAEUS). Slate-colored Junco. This is the common winter junco over most of West Virginia, occurring at all except the highest elevations. Breeding juncos in northern Preston County, just south of the Pennsylvania line, are generally closer to this race than the next.

298. *Junco hyemalis carolinensis* BREWSTER. Carolina Junco. Resident of our mountains, occurring in every mountain county from Preston and Mineral to Monroe and Mercer. In the mountains juncos inhabit every timber type present, and are at home in every type of cover from dense spruce and rhododendron to the comparatively open and dry "chestnut sprout" association. Juncos do not occur in winter in the spruce belt, so far as I have been able to determine, but they do spend the winters in the oak-chestnut and oak-pine woods in southern West Virginia at elevations of 4,000 feet or above. Hostetter has shown that Carolina juncos are permanently resident at 4,000 feet on Saltpond Mountain, just over the West Virginia line in Giles County, Virginia. Many birds move down into the valleys to spend the winter.

299. *Spizella arborea arborea* (WILSON). Eastern Tree Sparrow. A common winter visitor in all parts of the state except the higher mountains where the birds occur in migration only.

300. *Spizella passerina passerina* (BECHSTEIN). Eastern Chipping Sparrow. A common breeding bird in suitable habitats at all elevations in the state. There are a few winter records from central West Virginia southward.

301. *Spizella pusilla pusilla* (WILSON). Eastern Field Sparrow. Abundant in open fields and woodland borders throughout the state in summer; in winter some birds occur occasionally as far north as the Northern Panhandle, and regularly from central West Virginia southward.

302. *Zonotrichia leucophrys leucophrys* (FORSTER). White-crowned Sparrow. Regular migrant throughout central West Virginia. Apparently much less common in the Eastern and Northern Panhandles. Large flocks occur spring and fall in the high Cheat Mountains. It has been recorded in winter from the South Branch Valley (Hampshire County), and from southwestern West Virginia in Kanawha and Cabell Counties.

303. *Zonotrichia albicollis* (GMELIN). White-throated Sparrow. A common migrant throughout the state. Some birds spend the winter in southern and eastern West Virginia at low altitudes. Haller and I found these birds at Cranestown, Preston County, on June 3, 1936, but we have no evidence that they were breeding there. Their nesting irregularly in our high mountains is a distinct possibility however.

304. *Passerella iliaca iliaca* (MERREM). Eastern Fox Sparrow. A fairly common migrant, particularly west of the Allegheny Mountains. A few birds spend the winter at lower elevations throughout the state.

305. *Melospiza lincolni lincolni* (AUDUBON). Lincoln's Sparrow. Regular migrant, sometimes abundant, in the western part of the state. Sutton has found the bird in numbers in the Northern Panhandle, and I have known it to be quite common in the Terra Alta neighborhood. Apparently it is uncommon in the counties east of the Alleghenies.

306. *Melospiza georgiana georgiana* (LATHAM). Eastern Swamp Sparrow. Breeds in all our extensive mountain swamps, and along rivers at high eleva-

tions. It is known to nest in Preston, Mineral, Tucker, Grant, Randolph, Pendleton, Nicholas, Webster, Pocahontas, Greenbrier, and Fayette Counties. In other sections it is a common migrant, with a few individuals wintering from Upshur County southward.

307. *Melospiza georgiana ericrypta* OBERHOLSER. Western Swamp Sparrow. Wetmore secured specimens of this race at Huntington on May 2, 1936; at Barboursville, Cabell County, on October 26, 1936; at Mercer's Bottom, Mason County, on October 30 and November 2, 1936; and on Flat Top Mountain, Mercer County, on October 14, 1936. These are our only records, but the birds probably migrate regularly throughout the western part of the state.

308. *Melospiza melodia melodia* (WILSON). Eastern Song Sparrow. This race of the common song sparrow is a permanent resident in the extreme eastern part of the state, as attested by specimens taken in Jefferson County, and now in the National Museum, at Washington. Wetmore points out that this race may occur elsewhere in the state during migration.

309. *Melospiza melodia euphonia* WETMORE. Mississippi Song Sparrow. Cranberry Glades is the type locality for this race of the song sparrow, and it occurs throughout the state, save, perhaps, in the section occupied by the last. A summer resident at all elevations, the birds occur in winter practically everywhere below 3,000 feet. I have never found them in the spruce forest in winter.

310. *Calcarius lapponicus lapponicus* (LINNAEUS). Lapland Longspur. The collecting of two specimens by Dr. Wetmore on January 1, 1937, near Moorefield, Hardy County, supports an earlier sight record made by the writer at Red House, Putnam County, on March 7, 1936. Boggs and I have found the bird at Morgantown since that time. It probably occurs regularly during migration, and should be looked for on airports and golf courses.

311. *Plectrophenax nivalis nivalis* (LINNAEUS). Eastern Snow Bunting. Bibbee has collected this bird in Mercer County, and there are sight records from French Creek, Upshur County (E. A. Brooks); Gilmer County (Grose); Harrison County (Margolin and the writer); and Fayette County (Miss Sybil Ramsey). The University collection has a specimen presumably taken in Preston County, but without further data. All are winter records.

HYPOTHETICAL LIST

1. *Mareca penelope* (LINNAEUS). European Widgeon. Birds which appeared to be of this species have been seen a few times on Lake Lynn in company with baldpates. No specimen has been taken however.

2. *Buteo jamaicensis krideri* HOOPES. Krider's Hawk. A red-tailed hawk with much white in its plumage was seen by the writer near Little River, Pocahontas County, on September 20, 1942. The bird may have been referable to this western form.

3. *Rissa tridactyla tridactyla* (LINNAEUS). Atlantic Kittiwake. E. A. Brooks saw two birds which he identified as being of this species along the Ohio River, in Wood County, many years ago. He feels that such a sight record should be listed as hypothetical.

4. *Campephilus principalis* (LINNAEUS). Ivory-billed Woodpecker. Wilson records this species from Virginia in such a way as to make it quite possible that his reference was to that part of the Shenandoah Valley now included in Berkeley and Jefferson Counties, West Virginia. He collected between Martinsburg and Winchester, but the locality for the ivory-bill observation will probably never be determined.

5. *Tyrannus verticalis* SAY. Arkansas Kingbird. Professor Henry Kraybill, of Lewisburg, records a bird which he believes to have been of this species which spent some time around Alderson during the autumn of 1943.

6. *Pica pica hudsonia* (SABINE). American Magpie. The writer observed a bird of this species near Huntington on October 3, 1938. Since it may well have been an escape from captivity the record should go in the hypothetical list.

7. *Lanius excubitor borealis* (VIEILLOT). Northern Shrike. There are sight records of this species from Wood and Ohio Counties. In view of the uncertainty of field identification, the records are given hypothetical status.

8. *Vermivora bachmanii* (AUDUBON). Bachman's Warbler. W. C. Legg, whose work on Swainson's warbler has been outstanding, believes that he has seen this southern species also near Mt. Lookout, Nicholas County.

9. *Passerina ciris ciris* (LINNAEUS). Eastern Painted Bunting. John Burroughs, in one of his last printed articles, records seeing a painted bunting along Cheat River, in Tucker County. Since this is far from the bird's normal range, the species should have hypothetical standing until a specimen is taken.

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